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ORIGINAL ARTICLES.

TWO CASES OF ANEURISM IN GIRLS OF EIGHTEEN AND EIGHT YEARS OF AGE.

WITH A LIST OF REPORTED CASES UNDER TWENTY YEARS OF AGE.

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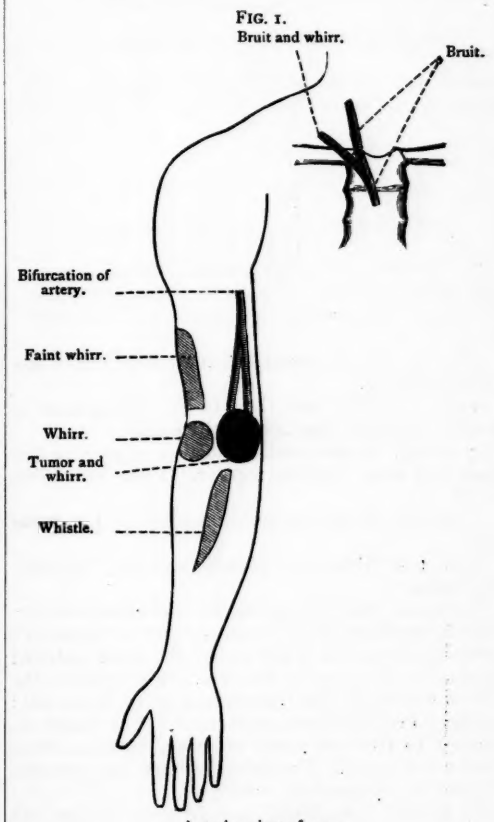
CASE I. *Spontaneous arterio-venous aneurism of the arm, with a high bifurcation of the brachial artery, in a girl of eighteen years; a second aneurism in the chest; apparent temporary cure of the aneurism of the arm from Esmarch's bandage, followed by the tourniquet and digital compression; radical cure by operation.*—For the notes of this case I am indebted to Dr. Florence Sibley-Lee, the then surgical resident in the hospital. Louisa L., a rosy Swedish chambermaid, aged eighteen years, was admitted to my clinic at the Woman's Hospital, at my instance, April 1, 1885. Her father had had a "tumor of the chest" removed. Her mother died six weeks after confinement. Six brothers and sisters are healthy. She came to this country in 1883, when she first noticed diffused red spots on the skin of her right arm and shoulder. These mottled spots still exist, some of the vessels being quite distinct. They exist only in the right arm, shoulder, and upper right chest.

In August, 1884, while walking she was sunstruck. She fell unconscious, and remained so for two days. On her recovery she first noticed a lump on her right arm. It was then small, but has increased considerably since, and now incapacitates her for her work by pain. She has had no after ill-effects from the sunstroke. The lump is just above and in front of the internal condyle, 1½ by 1¾ inches in size. It is soft and compressible, with distinct pulsation; is not tender. Over it, but neither above nor below it, a distinct thrill is felt. A bruit is heard over the tumor, over the outer part of the arm, and down the middle of the forearm, nearly to the wrist. The superficial veins are enlarged to double the ordinary size, and the bruit is heard over them, in the arm and forearm, as indicated in the drawings (Figs. 1 and 2), both as to situation and character. Pulsation is not felt in the veins. The brachial artery is distinctly felt, and its bifurcation at the upper third of the arm, well ascertained. This was confirmed later by the non-obliteration of the right radial after ligation of the ulnar above the elbow. The tumor is connected with the ulnar, the inner branch, compression of which arrests the bruit and thrill. This artery passes behind the internal condyle, as ascertained by its pulsation and by the arrest of pulsation upon pressure on the ulnar higher up in the arm.

Above the outer third of the right clavicle another thrill and bruit are heard and felt; the bruit commences at the junction of the manubrium and gladiolus, and can be heard over the right carotid and subclavian only. No distinct tumor is either seen or felt above either the sternum or clavicle.

The heart and lungs are normal; pulse 69; respirations 24; temperature 99°; general health excellent; urine, specific gravity 1021, and normal, having neither albumen nor sugar.

FIG. 1.



Anterior view of arm.

Diagnosis: Arterio-venous aneurism of the ulnar in the upper arm, and a second aneurism, beginning, probably, in the innominate.

April 17, 1.50 P.M. Two Esmarch bandages were applied to the right arm from the hand to the shoulder. The tumor at the elbow was excluded from the bandage. Over the third part of the right subclavian was placed a thin compress of soft cotton

with a cork over it, and the bandage passed firmly over this, and into the left axilla. At her request no ether was given.

FIG. 2.

Posterior view of arm.

At 2.15 P.M. she vomited some water taken a few minutes before.

2.30 P.M. Pulse had risen to 90. Complains of feeling very hot, especially in the head.

3.10 P.M. Restless and complains of pain in the head and arm. Ice-cap applied. Pulse had fallen to 78.

3.20 P.M. No coagulum perceptible in the aneurism.

3.30 P.M. Restless. Morphia, gr. ⅙, hypodermatically.

3.50 P.M. After being on for two hours, the Esmarch bandages were removed, and a Signorini's tourniquet applied high up on the arm, watched constantly by relays of students. The tumor at the elbow had apparently disappeared, no thrill was felt; a slight bruit, however, was heard. The blood returned to the arm much more slowly below than above the tumor. The thrill and bruit over the subclavian much lessened. Pulse 75.

7.45 P.M. Tourniquet removed after having been in place 4 hours. Pulsation immediately felt in radial and in the arm to within an inch of the tumor, then lost. Neither thrill nor bruit over the tumor. Arm feels "asleep." No thrill in subclavian.

8.05 P.M. Return of thrill and bruit at the elbow, but the pitch of the latter lower and softer. Thrill and bruit returned also in the subclavian.

She passed a fairly comfortable night and the morning pulse was 98 and the temperature 98.4°. In three days all the numbness disappeared and she was as well as before.

May 1. After an interval of two weeks a second similar attempt was made. Her weight had fallen from 142 to 132 lbs. partly owing probably to her much less active life. No ether was given.

1.40 P.M. Bandages applied as before and the arm rolled in cotton.

3.40 P.M. Restless. Morphia ¼ gr. hypodermatically.

4 P.M. After 2 hours and 20 minutes the bandages were removed and the tourniquet applied. The subclavian symptoms were unaltered.

5.15 P.M. Vomited.

7.45 P.M. Tourniquet removed after 3¾ hours, and digital compression of the brachial substituted. Neither pulsation, bruit, nor thrill in the tumor at the elbow.

8.30 P.M. Vomited.

9 P.M. After 1¼ hours digital compression stopped. Radial pulse at wrist perceptible, but there was neither thrill, bruit, nor pulsation in tumor. A flannel bandage was applied to the whole arm and the arm secured to the body by a second roller.

2d. A fair night. Morning temperature 98.6°. Pulse 80.

4.10 P.M. No pulse, thrill, or bruit over the tumor, but at its inferior posterior margin a slight pulsation and bruit. Tourniquet reapplied.

7.10 P.M. Tourniquet removed after three hours. No pulsation, thrill, or bruit. Arm bandaged as before.

3d. 1.30 P.M. On removing the bandage slight pulsation was felt. Bandage at once reapplied with a moderate compress over the aneurism. Pulse 78; temperature 99.2°.

4th. Bandage removed and reapplied. Pulse 88; temperature 100.6°. No pulsation, thrill, or bruit.

Menstruation appeared at its normal date. From this date till the 20th she improved daily. The bandage and compress were continued, and she sat up on the 15th for 1½ hours. On the 20th, after 19 days absence, the bruit, thrill, and pulsation returned as before, and the tumor again appeared and increased in size. The subclavian symptoms were unaltered.

29th. 1.15 P.M. Being unwilling to try the bandage again, she was etherized and the following operation was done, Dr. Thomas G. Morton assisting. An incision three inches long was made over the centre of the aneurism. A branch of the brachial, which dipped down beneath a cluster of enlarged veins, presumably the ulnar from its size and position, was first ligated. The veins were very numerous and large and their walls thin and friable, so that they tore on slight attempts at dissection and the loss of blood was very large, but was controlled by two Esmarch bandages applied above and below the seat of the operation pending the ligature of everything that bled. A number of these veins could not be separately dissected, but had to be tied in mass with the surrounding cellular tissue. No distinct point of communication between the artery and veins was found, and no sac was discovered; no evidence of clots from the previous Esmarching

was observed. The operation required 1½ hours. Strict antiseptic precautions were employed (carbolic acid being used). Combined tubular and capillary drainage by rubber tubing and horsehair was provided; the wound was closed by eight silver sutures and dressed with carbolized gauze.

30th, 9 A.M. Pulse 100; temperature 100.2°. Had passed a fair night.

7 P.M. Pulse 103; temperature 100.4°. Wound redressed, rubber tubing removed, moderate bloody serum on the dressings.

31st. Comfortable and bright. Morning temperature 99.8°; evening, 100.5°. Ten grains of quinine in the day.

June 1. Temperature 99.4°.

2d. Temperature 98.4°.

3d. Temperature 98.8°. Most of the horsehair and four sutures removed to-day, at the second dressing. Wound nearly healed. Meat diet, as she was hungry.

7th. Rest of horsehair and sutures removed; no pain. Sleeps and eats well.

8th. Sat up for an hour.

23d. Went out for a walk.

26th. Discharged well. Weight 132 pounds.

At present, November, 1887, she still remains well as to the arm. The symptoms, as to the probable innominate aneurism, remain stationary. She has married, and is pregnant.

The following sphygmograms were taken before the Esmarching at both wrists, and during the Esmarching at the left wrist, and again at both wrists twenty-nine days after the ligation had been done, to show the effect on the arterial tension and the action of the heart. It will be observed that prior to the application of the Esmarch bandage the sphygmograms show a very marked difference in the two radials (Figs. 3 and 4), that of the right or

FIG. 3.

Right radial before Esmarching.

FIG. 4.

Left radial before Esmarching.

diseased side showing a far greater excursion—*i. e.*, arterial relaxation—while both curves are about normal. In ten minutes after the application of the Esmarch the left radial curve (Fig. 5) is altered, its

FIG. 5.

Left radial ten minutes after Esmarching was begun.

excursion increasing, its angles, both of ascent and descent, losing their acuteness, and the secondary recoil curve upward in the middle of the descent being lost. These changes go on progressively, especially the increasing range of the excursion, until one hour and twenty-five minutes after the Esmarching had begun (Fig. 6), when the left radial

FIG. 6.

Left radial one hour and twenty-five minutes after Esmarching was begun.

tracing consists of a series of convex curves of almost equal value as to ascent and descent. In twenty-four minutes after the Esmarch bandage was removed, the left radial had regained about its normal excursion, but the curve was indistinct; especially in its descent, a character it retained four hours later (Fig. 7). At this same later period

FIG. 7.

Left radial four hours after Esmarching ceased.

the right radial (Fig. 8) showed its first noticed excursion, but had not regained at all its normal

FIG. 8.

Right radial four hours after Esmarching ceased.

curve. Twenty-nine days after the ligation the two radials were again tested, and with the remarkable result (*cf.* Figs. 3 and 4 with Figs. 9 and 10) that the

FIG. 9.

Right radial twenty-nine days after ligation.

FIG. 10.

Left radial twenty-nine days after ligation.

excursion of the right radial (the diseased side) had dropped to even slightly less instead of nearly three times greater than that of the left. Neither curve was quite normal, however.

CASE II. *Spontaneous aneurism of an interosseous artery of the hand in a girl of eight years; spontaneous cure.*—Miss M., aged twenty-four years, from whose right arm I removed a large horny mole November 16, 1887, was a delicate child. At eight years of age she sprained her right hand while practising gymnastics with an older and larger girl. A tumor appeared in the interosseous space between the fore and middle fingers just above the knuckles. She was taken to the late Dr. Willard Parker, of New York, who diagnosticated an aneurism, both thrill and bruit being present. She felt the thrill herself. Dr. Parker advised care as to lifting, and improvement of the general health, but no operation. In the course of seven or eight years it disappeared spontaneously. The interosseous space at the site of the

former aneurism is, at present, at least twice the width of the corresponding space on the left hand, and has a soft, boggy feel. No present evidence of the aneurism exists.

These two cases are peculiar, by reason of the very early age at which they arose. In vol. lxvii. of the *Medico-Chirurgical Transactions* for 1884, Mr. R. W. Parker has collected all the cases he could find of spontaneous extracranial aneurisms in persons under twenty years old, and the entire list includes only fifteen cases. To these fifteen I add the two reported this evening, and the following eleven additional cases, making twenty-eight in all. Of these I owe the first seven to the efficient search of Dr. William J. Taylor, and the last four to Dr. James C. Wilson.

CASE XVIII. *Aneurism of the left superficial palmar arch and left ulnar.*—Zichi Woinarski (*Australian Medical Journal*, May 15, 1884). At twelve years of age, while lifting a weight in some domestic duties, patient felt something give way in her left hand, and immediately after noticed a pulsating swelling in the palm, and some time after a similar swelling at the inner anterior aspect of the left wrist. Neither rheumatism, scarlet fever, nor hereditary taint existed. Heart normal. After failure by pressure with Martin's rubber bandage he tied the brachial artery with a successful issue.

CASE XIX. *Aneurism of the elbow.*—Mr. Pollock (*British Medical Journal*, 1886, ii. 1033). A boy of fourteen years, with ulcerative endocarditis. The aneurism appeared three days after admission. Death followed, without interference with the aneurism, in a few days, and embolus was discovered at the seat of the disease.

CASE XX. *Arterio-venous aneurism of the occipital artery and right and left transverse sinus.*—(Rizzoli, quoted by Bramann, *Archiv für klin. Chir.*, 1886, xxxiii. p. 6). Female, aged eight years. Caused by exposure to the sun apparently. Without treatment the child died of meningitis. The post-mortem showed a defect in the skull, and the communication above stated. (This case and the two following I must cite at second hand, as the original references are not accessible to me.)

This case is the only one, besides the first case I report, of spontaneous (?) *arterio-venous* aneurism arising under twenty years that I have found. It is, at least, a curious coincidence that it apparently arose from exposure to the sun's heat as my own first case did from, or, at least after, sunstroke.

CASE XXI. *Aneurism at the elbow.*—(Jobert, quoted by Bramann, *vide antea*, p. 22). Male, aged eighteen years. Spontaneous origin. Cured by two injections of liquor ferri.

CASE XXII. *Varicose aneurism of popliteal.*—(Boling, quoted by Bramann, *vide antea*, p. 38). Male, aged sixteen years, apparently spontaneous origin. Sudden onset. Cured by amputation. The popliteal artery and vein had been perforated by an exostosis. (Perhaps this case should be excluded by reason of its cause.)

CASE XXIII. *Spontaneous aneurism of left iliac.*—Alfred C. Post (*New York Journal of Medicine and Surgery*, iii. August 26, 1840). A blacksmith, aged twenty years, had had syphilis. Nine months previously he had first noticed the tumor, size of a filbert, with marked pulsation. It was treated as a bubo, and finally opened, when its aneurismal character was first discovered. Death. No autopsy.

CASE XXIV. *Aneurism of the arch of the aorta.*—Mr. Hutchinson (*Transactions of the Pathological Society of London*, v. 104). A girl, aged four years. No prior symptoms of aneurism. Child died after ten days' illness, of acute pericarditis. Mr. Hutchinson believed that the aneurism originated as an abscess, and had ulcerated into the vessel. The lining membrane of the aorta was smooth and perfectly healthy up to the edges of the orifice of communication (one-fourth by one-eighth of an inch) with the sac. This was the size of two chestnuts placed side by side, and hung from the arch of the aorta into the pericardium, compressing somewhat the pulmonary artery. The heart was normal, but in the lungs were tubercles, with chalky concretions in the bronchial glands. (Possibly this case should be excluded from the list as not probably arising spontaneously in the artery.)

CASE XXV. *Aneurism of the ductus arteriosus in a child a month old.*—Martin (*Bull. Soc. Anat.*, 1827, ii. 17.) Size of nut, filled with a clot, and impervious.

CASE XXVI. *Aneurism of the abdominal aorta in a fœtus, causing dystocia from the size of the tumor.*—Phänomenow (*Archiv f. Gynækol.*, 1881, xvii. 133). Breech presentation; stillborn; circumference at navel fifteen and three-quarters inches; circumference of head thirteen inches; endoarteritis of aorta; dilatation of left ventricle.

CASE XXVII. *Aneurism of the arch of the aorta in a child of eight years of age; result unknown.*—Roger (*Bull. Soc. Méd. des Hôp. de Paris*, 1863, p. 499). Child of ten years; out of health for five years. First suffocative attacks at eight years of age; tumor above and to left of sternum. Passed from under observation.

CASE XXVIII. *Aneurism of the arch of the aorta in a boy of thirteen years of age.*—Sanné (*Rev. Mens. des Malad. de l'Enfance*, Feb. 1887). Dyspnœa; death; cardiac hypertrophy; aortic arch thinned, dilated with an aneurism; aortic valves with vegetations.

The cause of spontaneous aneurism is most frequently an embolus arising from valvular cardiac disease. The most remarkable case arising in this way that I have found is the one reported by Langton and Bowlby, in the *British Medical Journal*, 1886, ii. p. 1031. This case seems to be absolutely conclusive as to the causative relation between embolism and aneurism.

The girl, aged twenty years, had ulcerative endocarditis. Three and four weeks, respectively, before her admission to the hospital aneurisms appeared at the right elbow and right popliteal space, for which the brachial and femoral arteries were successfully tied. Six weeks after admission she became hemiplegic, and died two weeks later. The sinuses of Valsalva were dilated, the arteries diseased at a large number of places, multiple emboli and aneurisms were found in the vessels of the brain, trunk, and extremities.

But we must also recognize endoarteritis as another distinct cause. That this may begin soon after and even before birth Cases XXV. and XXVI. will show. Rauchfuss in his Dissertation (1869) has collected the literature bearing on the subject and well discussed it. It is certainly very rare in early life as is natural, but when it does occur may easily give rise to aneurism. Moutard Martin (*Bull. Soc. Anat.*, 1875, p. 775) gives a striking case of atheroma of the arch and hypertrophy of the heart in a boy two years old, which presents all the needed factors for the later formation of such an aneurism had not the child's life been suddenly cut short by smallpox.

Many of the cases in the table of Mr. Parker arose also from embolism. But a few arose from

endoarteritis, as proved by the autopsies. In my first case the heart was normal. The aneurisms, I believe, arose from the diseased state of the arterial walls, which was first shown by dilatation of the smaller arteries causing the peculiar mottling of the surface nearly two years before the presumable origin of the aneurisms. The vessels being weakened, it only required some sudden strain, or possibly a blow, as in her fall when sunstruck, to cause a rupture, this rupture apparently at once breaking also into the similarly weakened coats of the neighboring veins at the elbow (the diseased state of the coats of the veins was shown conclusively at the operation), while in the innominate the second aneurism is limited to the artery alone. The first two sphygmograms seem to confirm this view, for while generally that taken on the diseased side shows lessened force, in this case the universally dilated and weakened arteries allow of a larger sphygmographic excursion. It is extremely interesting also to notice that, though the brachial had a high bifurcation and the ulnar alone was tied, yet the effect of the operation was to restore the right (diseased) radial to almost the same sphygmographic tracing as that of the left.

As to the treatment, I deemed it best to discontinue the Esmarching on both occasions by reason of her general condition of extreme restlessness and discomfort (in spite of her fortitude), and the marked variation of the left radial pulse. This showed a profound change in the increased arterial tension and altered curve (Fig. 5). The first could have been overcome by ether, but the anæsthetic might have added to the circulatory dangers. Esmarch's bandage has been applied continuously for as long as eight hours I knew, but I was unwilling to risk its further application in this case in view of the possible cure by the substitution of the tourniquet and also the good prospect of relief by an operation, as was shown later. As it was, an apparent cure was obtained for nearly three weeks by the tourniquet, digital compression, and compression by a roller bandage.

The operation was chiefly noticeable for the difficulty with which the hemorrhage was controlled on account of the diseased condition of the walls of the veins. They tore on the application of the slightest force, and at a number of points had to be tied *en masse* with the surrounding tissues to give additional firmness. The result was especially gratifying not only in the fact of a cure, but that I had no trouble from secondary hemorrhage, which I attribute to the antiseptic method. This secured the speediest possible union without any inflammatory reaction. The arm was entirely well in nine days after the operation.

ABDOMINAL SECTION FOR PERFORATED TYPHOID ULCER.[1]

BY THOMAS G. MORTON, M.D.,
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IN THE MEDICAL NEWS of November 26, 1887, in an article on "Surgical Consideration of the Abdominal Complications of Typhoid Fever," by Dr. Thomas S. K. Morton, two cases of abdominal section for perforating typhoid ulcer are reported. The first operation was performed at Strasburg in October, 1885, by Professor Kussmaul, who excised that portion of the gut including the perforation; the wound was closed by Lembert sutures, the peritoneal cavity cleansed with a salicylic solution, a large drain was inserted, and the abdominal wound closed; the patient never reacted, and died eleven hours afterward.

The second case was under the care of Mr. T. H. Bartleet about a year ago at Birmingham; perforation was diagnosed, an abdominal section was made, "great fecal extravasation was discovered upon opening the peritoneal cavity, an unsuccessful hurried search was made for the bowel opening, the cavity was irrigated, a drain put in, and the parietal incision was closed; the patient died during the second day after the operation." These two cases, with the one which very recently came under my observation, constitute all the instances I have been able to find of surgical interference in the intestinal complications of typhoid.

Even the most recent works on abdominal surgery make no mention of the surgical treatment of this complication in typhoid fever, nor of the possibility of repairing the intestine after perforation.

In the Philadelphia *Medical Times* of December 11, 1886, Dr. James C. Wilson called the attention of the profession to the possible propriety of surgical interference in perforating typhoid ulcers, and says: "In point of fact, the objections which may be urged against laparotomy in intestinal perforation in enteric fever, are no more forcible than those which would have been made use of, at first, against the same operation in gunshot wounds of the abdomen," and the fact must not be overlooked, says Dr. Wilson, that "while a few cases of perforation occur in the second week of the disease while the infective process has yet some time to run, a far larger proportion take place in the period of convalescence when the condition of the patient, except for deep ulceration, often single, is tending toward recovery."

Granted that the diagnosis of perforation has been made out, shall a patient, although in a most unfavorable condition from the very nature of the malady for any operation, be allowed to perish? or ought the surgeon to feel justified in making an attempt to save life? Indeed, is it not his duty to open the abdomen and repair the perforated gut? Especially it would seem to be indicated when the accident has been early recognized, and the patient not in a sinking or moribund condition.

Although recoveries after supposed typhoid perforation have been reported, it is highly probable that there was an error of diagnosis, at least recovery must be extremely unusual, for the fatality of such a complication is universally recognized.

The following case represents, so far as I am aware, the first operation done in this country for the repair of a perforated typhoid ulcer; unfortunately it was not undertaken until many hours after the accident had occurred, but the patient's condition even at that late period gave sufficient encouragement to

[1] Read before the Philadelphia Academy of Surgery, December 5, 1887.

warrant the performance of a formidable operation under most trying circumstances, and which, I believe, in no wise hastened the fatal termination.

Lee A., aged twenty-three, enjoyed perfect health until the last week of October, 1887. He then acquired specific urethritis, but was little troubled thereby and continued his usual occupations. One week later he first presented symptoms of typhoid fever.

His was what is commonly called a "walking" case of that disease, and he was scarcely in bed at any time until the last day and a half previous to his sudden death. Dr. Lewis W. Steinbach was his physician, and so light did the case seem that he had ceased visiting him regularly. Although at most it was but the end of the third week of disease his temperature had for several days been scarcely above the normal. On the afternoon of November 12th, he felt very well, and in the absence of his family he ate a hearty meal of meat, etc.

A few hours afterward he was seized with most excruciating pain in the right lower portion of the abdomen, followed shortly by a violent chill and subsequent rapid rise in temperature and pulse and respiration rate.

The abdomen became tympanitic, and the pain more diffuse.

I saw him in consultation next morning, positively diagnosed perforated typhoid ulcer, and urged abdominal section as the man's only chance. To this advice he and his friends were sensible enough to conform, and preparations for operation were at once made.

The man was of splendid physical frame, and at the beginning of his illness had weighed 190 pounds. Just before operation his temperature was 104½°, pulse 156, respiration about 45. His face was deeply flushed. He seemed perfectly rational; being able himself to decide in favor of the proposed operation. During the night he had vomited several times, but otherwise the symptoms aggregated simply as above at this time.

A room was cleansed as well as possible; anæsthesia by ether induced, and he was transferred to the table and the abdomen shaved and made surgically clean.

Operation.—Twenty hours after perforation; condition as above. A median incision from just below the umbilicus to the symphysis pubis was made. Considerable yellowish serum poured out, and in it floated flakes of purulent lymph. A little gas and feculent material also thus made their exit. The small intestine was at once turned out, and searched from the cæcum upward. About three feet above the valve a perforation was discovered. It was about three-eighths of an inch in diameter, and occupied the lower (toward the cæcum) end of a large ulcerated Peyer's patch. This lesion was repaired by turning the whole area of ulceration into the lumen of the bowel by means of eight Lembert sutures. These were started into the two outer coats of the bowel, about three-sixteenths of an inch from the edge of the ulcer, brought out again one-sixteenth of an inch from that edge, then reintroduced in like manner upon the other side of the ulcer, paying no attention to the ulcer and bowel-tissue between. When these eight sutures were tied, the perforation, ulcer, and the bowel-tissue below it turned into the lumen of the bowel, whilst the peritoneal surfaces came into apposition above. This done, and the remaining portion of the intestine having been examined, attention was directed to a necrotic-looking ulcer which had been observed not far above the cæcum.

The ulcers were all outlined upon the peritoneal surface by a deep dusky-red, slightly swollen area corresponding to their own outlines. The one especially referred to presented in a portion of its area a gray aspect, as if of sphacelus. Although there was no actual perforation at this point, its speedy occurrence was thought likely, and that the more prudent course would be likewise to turn in this ulcer area. This was accordingly done with about six Lembert sutures. No other lesions were discovered upon further search of the intestines, etc., although ulcerations extended to quite a high point of the small gut. The whole intestine was greatly distended with gas, and quite difficult to manipulate: it was congested to a dusky-red hue throughout, while in various sized patches here and there the peritoneal covering of the gut was in a state of arterial hyperæmia, with an occasional recent ecchymosis.

The abdomen was then cleansed by very copious irrigation with water which had been boiled, and allowed to cool to a temperature of about 110° to 105°. Then the cavity was sponged dry, and the intestines returned: they had during the whole process been protected by towels wrung out of hot water, and frequently changed.

Considerable difficulty was experienced in returning the intestines from their great distention, but it was accomplished without resorting to puncture.

The parietal wound margins were then brought into apposition with a glass drain running through the lower extremity of the wound, and down to the bottom of the pelvic cavity.

The patient speedily became conscious upon withdrawing the anæsthetic, and remained so, without pain, for several hours, although the pulse, temperature, and respiration still kept very high. Six hours after operation, he suddenly sank into a collapsed condition, became cold and pulseless, and in an hour died.

Post-mortem examination, twenty-four hours after death. Decomposition far advanced. Drain-tube had been removed shortly after demise. Upon opening the abdomen by an incision parallel to the operation-wound, everything was found to be as it should. The intestines were distended with air, and also contained a small amount of yellow feculent liquid. Some few of the coils in the upper portion of the cavity were slightly adherent from the presence upon their surface of recent, healthy looking lymph. Others of the coils were congested to a bright pink color. There were no subperitoneal ecchymoses upon the intestines, but here and there, upon the surface of the mesentery, near the intestinal attachment, were to be seen such extravasa-

tions; none were of greater extent than a half inch diameter. In the deeper tissues of the intestine, however, ecchymotic spots were present at quite a number of points—one larger than a quarter inch in diameter.

Typhoid ulcers extended to a distance of probably eight feet above the cæcum; those nearest it being most marked, and, with one or two exceptions, furthest advanced. Three inches above the valve was the ulcer which had looked necrotic at the time of operation, and which had been turned into the lumen of the bowel as a precautionary measure. It was in excellent condition. Three feet above the cæcum the repaired perforated ulcer was come upon, and found in like excellent condition.

No additional perforations were discovered, and the intestine when distended even forcibly with water did not leak or give way at any point.

The lumen of the bowel at the points of suture, when moderately distended, was at least an inch. There was marked enlargement of the mesenteric glandular system. About two ounces of clear serum had collected in the hollow of the sacrum since taking out the drain tube, which had been done a few moments after death. The peritoneum was perfectly clean and free from extraneous matter, purulent lymph, or blood. The parietal incision had undergone no other change than that of simple gluing together of its surfaces.

The examination did not extend beyond the abdomen: otherwise than as above, the search of that cavity was negative.

Time for operation.—As soon as the diagnosis of perforation has been made out, the operation should be immediately performed, every moment of delay increases the danger of the situation; indeed if any successful results are to be chronicled, those operations which are undertaken immediately after the perforation will unquestionably be the successful ones.

Method.—One of three methods can be adopted, should an operation be decided upon: First, the perforation can be closed with Lembert sutures; second, a formal excision of a portion of the gut, including the entire ulcer as performed by Kussmaul; or third, the bowel can be brought to the surface and an attempt made to form an artificial anus.

Incision.—The median abdominal incision affords the best opportunity for an examination of the intestines; it should be ample and extend from the umbilicus to within two inches of the pubes; any portion of the intestine likely to be involved can thus be easily reached; the search should be thorough, and in addition to closing the perforations, the intestines should be carefully examined to determine the condition of other ulcers, and if any be found in which perforation seems likely to occur, such should be turned into the bowels by Lembert sutures in a similar manner.

Prior to abdominal closure the belly should be thoroughly cleansed with hot water. The after-treatment would not vary from the usual treatment of typhoid fever.

It is interesting to note that an examination of the specimens of the above case showed that although a considerable amount of tissue had been turned in, in both places, where the perforation existed, and where a perforation seemed likely to occur, no unsafe or marked diminution in the calibre of the bowel was found.

TREATMENT OF INTRALARYNGEAL ABSCESS FROM NECROSING CARTILAGE.

BY J. SOLIS COHEN, M.D.,
OF PHILADELPHIA, PA.

ON the principles of good surgery, intralaryngeal abscess from diseased cartilage is best treated by splitting the larynx in the middle line, removing the dead structures, and thoroughly scraping the parts down to healthy tissue. This being accomplished, measures should be immediately taken to provide for drainage in case of continuation of the suppurative process and to adopt such aseptic management of the parts as the conditions found may indicate. Thorough response to these indications may require precautionary tracheotomy for respiratory purposes until subsidence of the diseased process has taken place, or for purposes of securing functional rest to the larynx when such subsidence is not going to take place.

This plan is far more judicious than to await the fragmentary discharge of carious particles, or carious cartilages by expectoration, or attempts at their withdrawal by intralaryngeal procedures through the normal apertures. When the larynx is exposed by section to direct vision, the entire extent of the disease can be determined, and fatally diseased tissues be removed at once. The impairment of voice which may follow must be regarded as a secondary matter in the great majority of instances. Prompt treatment of this kind ought to save many cases that perish because proper surgical interference is postponed so long that the hurried tracheotomy performed in an emergency merely saves the patient from impending suffocation, while he dies a few days later from septic poisoning, the result of absorption of pus which should have been evacuated by the most direct access possible, whether by intralaryngeal puncture or incision, or by cutting down upon the parts from the exterior.

A CONTRIBUTION TO THE PHYSIOLOGICAL ACTION OF THE HYDROBROMATE OF HOMATROPINE,

WITH A SUMMARY OF ITS ACTION ON THE EYE.

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AND

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Action on the eye.—The thorough study of the action of hydrobromate of homatropine by Risley[1] and Jackson,[2] in which they prove that this drug is

[1] The Comparative Value of the Mydriatics. S. D. Risley, M.D. Trans. of the American Ophthalmolog. Soc., 1881.

[2] Homatropine Hydrobromate. E. Jackson, M.D. THE MEDICAL NEWS, July 24, 1886.

entirely satisfactory for the correction of anomalies of refraction, and that it is an efficient and reliable mydriatic, is so entirely in accord with our own experience that this communication will not be burdened with statistical facts in further confirmation of this belief.

Method of employment.—In order to acquire full control of the accommodation, frequently repeated instillations of the drug must be employed. Jackson prefers a solution of a strength equal to 1 in 50 or 1 in 40. Our own experience has been almost entirely with one equal to 1 in 80, and we have only occasionally used stronger solutions. The patient is directed to put a drop of such a solution in each eye at bedtime on the night before the measurement is to be made, and every fifteen minutes for one and a half hours the next morning. The latter instillations are most advantageously made by the surgeon himself. If the ordinary tests do not then show that the accommodation is under control, the instillations may be continued. Very occasionally it has seemed wise to repeat this procedure on the following day.

Pupil and accommodation.—As has been noted before, the effects of this drug upon the pupil and the accommodation proceed *pari passu*—in other words, dilatation of the pupil and paralysis of accommodation end together.[3] The pupil usually begins to dilate in from seven to twenty minutes after the first instillation, the average in about fifty observed cases being from ten to fifteen minutes. The drug obtains control of the accommodation in about one hour—Jackson says in from forty to ninety minutes—and begins to lose its hold in from one to two hours; in Jackson's observations in from one to six hours. Recovery takes place in from eighteen to seventy-two hours. When the duration of the drug's effects was longer than three days, suspicion was not wanting that a perfectly pure homatropine had not been obtained. Homatropine probably dilates the pupil, as atropine does, by a peripheral action. The present communication does not include experiments upon this point.

Local effects.—Slight smarting is not infrequently complained of by the patient immediately after the application. Oliver[4] states that the conjunctival irritation of hydrobromate of homatropine may be avoided by the use of a perfectly neutral salt. The smarting is of no moment, although after repeated instillations slight injection of the bulbar conjunctiva is, we think, always present. This hyperæmia is well described by Jackson (loc. cit.). We have in one instance only seen a distinct conjunctivitis follow the frequent use of the drug. The homatropine solution in this instance was freshly prepared and the applications were made with our own hand. In a few cases we have observed after the use of this mydriatic in the manner just described, that a *slight* gray haze appeared in the fundus, or that the choroid became "woolly." These appearances invariably had disappeared when the effects of the drug had subsided. Such slight changes in the eye-ground are so readily seen or not seen, according to circumstances, that this point needs verification. Jackson has noted that hypodermatic injections of homatropine produce hyperæmia and later abscess. We have no observations to add to this statement.

General effects.—The toxic effects which quite frequently appear after the use of duboisine and much less frequently after atropine and hyoscyamine are well known. The comparative great infrequency of constitutional disturbance after the use of even frequently repeated instillations of strong solutions of homatropine renders this method safe just as it is reasonably accurate. In more than two hundred cases Jackson found only three who complained of feeling a little "strange" or intoxicated. Risley[1] has observed distinct drowsiness.

Ziem,[2] by the employment of a small quantity of a one-half per cent. salve of homatropine in the conjunctiva, produced distinct intoxication. We have in our series of cases seen one instance of hallucinations and incoherency of speech. The patient was a highly neurasthenic woman nearing the menopause. A distinct *influence upon the circulation* is a phenomenon quite commonly to be noted after the frequent instillation of this drug in the conjunctival sac. Jackson (loc. cit.), in speaking of its action upon the circulation, says, "In my experience a decrease in the pulse-rate is the most constant symptom produced. Next to this is an increase in the fulness and force of the radial pulse." In our own experience a distinct decrease in the number of pulse-beats has frequently, but not invariably, been present. In order to determine experimentally the reason of this slowing of the pulse, as well as the action of the drug upon the cord and peripheral nerves, this paper was especially undertaken.

Summary.—Hydrobromate of homatropine, properly applied by frequent instillations, is a reliable mydriatic for the correction of anomalies of refraction in healthy eyes. Experience with us is not at hand to determine its value for this purpose in eyes affected with retino-choroidal disturbance. Atropine and hyoscyamine are preferred, for the obvious reason that their prolonged action is desirable as a method of treatment. The danger of systemic disturbance from homatropine is far removed, even when repeated instillations have been made. Its temporary action upon the pulse causes no inconvenience to the patient. Slight hyperæmia of the conjunctiva almost invariably follows its use; true conjunctivitis, if it occurs at all, must be excessively rare.

When a dose of homatropine amounting to three-quarters of a grain is injected into the posterior lymph sac of a medium-sized frog, there follows in the course of from one to two minutes, a peculiar change in the respiratory rhythm resembling closely the so-called Cheyne-Stokes breathing; this is followed by a marked decrease in respiratory movement, both as regards numbers and depth, the breathing becoming more and more shallow, and finally stopping entirely after the lapse of three minutes from the administration of the drug. Tests show at this time that sensation is entirely unaffected,

[1] Jackson, loc. cit. Schäfer: Archiv. Ophthalmolog, November, 1887.

[2] Oliver: American Journal of the Medical Sciences, July, 1881.

[1] Risley: Verbal communication.

[2] Centralblatt. f. Augenheilk., Aug. and Sept. 1887.

and that voluntary movement is well preserved. But slight changes take place in the condition of the batrachian after this for many minutes; but finally, forty minutes after the poisoning, slight tetanic spasms develop themselves, which at first seem to be due to external irritation, but which later occur entirely without cause from the periphery apparently. The stage of spasm, however, lasts but a few minutes, and the frog rapidly passes into a condition of relaxation and paralysis.

At this time electricity produces normal contractions in the muscles, while galvanizing a motor nerve trunk calls forth a response in the tributary muscles, showing that the drug in producing paralysis must act on the spinal cord or brain.

That it acts on the spinal cord is proved by the fact that if a limb be protected from the action of its power by tying its artery, reflexes fail as completely when stimuli are applied to the protected as when irritation is used to the unprotected leg, so that the influence cannot be on the sensory nerves. Further than this, if another frog have a ligature tied tightly around the limb, in such a manner that nothing escapes its grasp save the nerve trunk, and the drug be given below the ligature into the limb, reflexes remain quite as active on impulses applied to the drugged as to the normal leg. Again, we have proved that the direct application of drop after drop of a solution of six grains to the ounce of water to the bared sciatic fails to retard the passage of sensory impulses up to the spinal cord.

In one experiment, however, it appeared that when the drug was given into the body, and the limb was protected, reflexes at first were somewhat stronger on irritating the protected toes than when the unprotected foot was irritated. This condition was only temporary, and must have been due to some fallacy in the test, since the other experiments directly on the nerve trunk failed to discover any influence. When the drug is injected directly into a limb, and held there by ligature above, the muscles seem to retain their power of reacting to the electric current as normally as usual.

We may, therefore, conclude that homatropine produces, in very large dose, at first but a slight change of respiratory rhythm, followed shortly by failure of respiration, which is again succeeded after some time by a period in which tetanic spasms assert themselves, alternating with relaxations approaching paralysis, which finally deepens into absolute palsy, with failure of all nervous phenomena. The spasms are evidently, from their tetanic character, spinal, as is also the palsy, the nerve trunks and muscles being unaffected. These experiments coincide with those of Tweedy and Ringer,[1] who, carrying their experiments to a greater length of time, found that in six to eight hours the palsy was replaced by a return to voluntary movement, which was associated with tetanic spasms of greater intensity than the first.

The action of this drug on the circulatory system is, however, much more interesting to the clinician, since it almost invariably produces a slowing of the pulse when frequently dropped in ordinary solution into the eye.

The following table shows better, and more briefly than can be done by ordinary text, the effect of the drug when applied to the heart lying *in situ*:

Time.	Drug.	Pulse.	Remarks.
9.03	.....	42	
9.04	.....	42	
9.05	5 drops	42	Solution 3 grs. to ½ oz.
9.06	.....	36	
9.07	.....	30	Diastole prolonged, systole incomplete.
9.08	.....	30	Diastole very full.
9.13	.....	30	
9 15	5 drops more	.....	
9.17	.....	30	
9.19	.....	26	
9.28	.....	26	Fibres of heart muscle about apex very well marked.

From this experiment it becomes evident that homatropine slows the pulse by a direct action on the heart itself, or its ganglia, or the peripheral ends of the vagi. Tweedy and Ringer (loc. cit.) also reached identical results.

In the experiments performed by us on the higher animals (dogs), notwithstanding the fact that they were frequently repeated, we found that large amounts of the drug affected the heart but little.

When ten drops of a solution of six grains to the ounce are injected into the jugular vein, in the course of from one to two minutes there occur a slight fall of pressure, and an equally slight decrease in the number of pulse-beats. If the dose has amounted to as much as thirty drops, these symptoms occur again, but to a more marked degree, the rate falling as much as thirty or forty beats per minute, while the pressure may fall an equal number of millimetres of mercury. That the fall of pressure is not due to depression of the vasomotor system is proved by the fact that the production of asphyxia always was followed by rise of pressure; and that the slowing of the rate was partly due to vagal stimulation, was proved, we think, by the fact that section of the vagi always caused a marked increase in the pulse-rate, although not such a rise as would appear if the inhibitory apparatus were intact. These results were reached both in curarized and non-curarized dogs, and are undoubtedly correct.

The conclusions which we think may be drawn from these experiments are as follows, namely, that homatropine slows the heart of both frog and mammal, by a direct depressing effect on that viscus, aided at the very first by a stimulation of the inhibitory apparatus, as was witnessed by the effect of section of the vagi in dogs, and by the prolonged and full diastole in the heart of the frog.

It will be seen, therefore, that Tweedy and Ringer were right in their statement that homatropine acted upon the heart in much the same manner as atropia itself, although to a weaker degree. Beyer has also reached results on the heart of the terrapin similar to our own.

[1] Lancet, 1880, vol. i. p. 795.

FRAGILITAS OSSIUM.

MULTIPLE FRACTURES (THIRTY-TWO) OCCURRING IN VARIOUS MEMBERS OF A FAMILY.

BY DE FOREST WILLARD, M.D.,
OF PHILADELPHIA.

THE father of the brittle family described below was a small, spare man; the mother, large, corpulent, and excessively hysterical. There was no history of broken bones in the ancestry of either parent. Both denied the existence of syphilis, and neither of them bore any traces of this disease. The children were all small—some of them almost dwarfs; all were puny and had notched teeth, still they rarely suffered from serious illness, and as there have been no deaths an opportunity has not been offered for an examination of the osseous tissues.

A.—Father.
1. Fracture of right clavicle. Direct and decided violence.
2. Fracture of right clavicle (several years later). Direct and decided violence.
3. Fracture of rib. Direct and decided violence.

B.—Daughter, now eighteen years old. Height, four feet.
1. Left femur, upper third, twelve months. Fell one step to pavement.
2. Left femur, upper third, two and a half years. Tripped on carpet.
3. Left femur, upper third, three years. Slipped upon oil-cloth floor.
4. Left femur, upper third, four years. Jumped from low stool.
5. Left femur, upper third, seven years. Slipped on ice.
6. Left femur, upper third, seven and a quarter years. One day, after resuming walking, turned suddenly and callus snapped.
7. Left femur, upper third, nine years. Fell two steps.
8. Right femur, upper third, twelve years. Tripped on carpet.
9. Left clavicle, seven years. Fell down stairs without other injury.

(Both femora now united with a projection anteriorly about two inches below the trochanters. The fragments are at right angles to each other; but union has been strong and serviceable for the last six years. Walks with difficulty.)

C.—Daughter.
1. Right femur, upper third, four years. Turned suddenly while standing at a window; screamed before she fell.
2. Right femur, upper third, seven years. Tripped on carpet.
3. Right femur, upper third, sixteen years. Fell on ice.
4. Left clavicle, six years. Fell from a chair.
5. Left clavicle, twelve years. Fell backward on the floor.

(Femur united with right-angled deformity anteriorly.)

D.—Daughter.
1. Right femur, upper third, eight weeks. Cause unknown.
2. Right femur, upper third, fifteen months. Slipped on orange-peel.
3. Right femur, upper third, twenty-two months. Fell one step to pavement.

(Femur now firmly united for eighteen years, but with two inches of shortening and with anterior angular deformity.) (Dislocation of right shoulder at five years. Burned over nearly one-third of surface at fifteen, but survived.)

E.—Son.
1. Right femur, upper third, two years. Fell about eight inches.
2. Right femur, upper third, eight years. Knocked down in the street.
3. Right clavicle, three years. Fell from the top of a sewing machine.
4. Right rib, three years. Same accident.

F.—Daughter.
1. Left clavicle, at birth. (Easy labor.)
2. Left clavicle, thirteen months. Fell from a stool.

G.—Daughter.
1. Right clavicle, one week. Cause unknown.

H.—Daughter.
1. Left clavicle, at birth. (Easy labor.)

I.—Son.
1. Left clavicle, three weeks. Fell from a bed.

J.—Son.
1. Rib, seven years. Fell down stairs.

Only one child escaped. She was the largest and strongest of the family and has now two children, neither of whom has as yet received any injury.

The manufacture of this fragile ware was temporarily suspended by the demise of the male member of the firm, but seems destined to be speedily resumed, as the daughters have now commenced to bear offspring, and one grandchild has already, at four weeks, broken its thigh while being turned in bed, and at nine months has rebroken the thigh from a trifling cause.

These various fractures were treated by myself and numerous other surgeons in Philadelphia, and, as a rule, united speedily. In the femora the new line of fracture was nearly always through the old callus, although the union would seem to be perfectly firm, and an interval of several years had, in some instances, elapsed. The angle of deformity usually increased with each successive break.

Bone-forming food and medicines were given, but their influence could be only inferentially judged.

MEDICAL PROGRESS.

SUPPURATIVE PERITONITIS, WITH RECOVERY.—At a recent meeting of the Clinical Society of London, MR. BARWELL read a case of suppurative peritonitis; opening, washing, and sponging the peritoneum; recovery. The man, aged forty-two, accustomed to drink a good deal, was admitted into Robertson ward, Charing-Cross Hospital, on June 24, 1887. Six days previously he fell

and struck the left lower part of the abdomen, but seemed very little hurt. Five days afterward, he, in stooping, felt severe pain in the lower part of the abdomen; he vomited and passed a little very dark colored urine. (Absence or presence of blood cannot be verified.) He went to bed; his abdomen swelled; he passed very little urine; vomited after, and sometimes without, taking food. 24th. On admission he was placed in a warm bath; while in it he passed what may, he thinks, have amounted to a wineglassful of urine. At 2 P. M. Mr. Barwell found him with pinched, anxious countenance, pulse small, hard, and quick, and temperature 100.4°; dry skin; tongue somewhat coated; vomiting; abdomen slightly tender, save in the left iliac region, much swollen, very tympanitic, quite down to the pubes; tapping it produced a peculiar thrill not like that of flatulence. A No. 12 catheter brought away no urine, even though pressed far back, but the instrument when withdrawn was full of urine deeply stained with blood. 25th. On three occasions ten ounces of urine had been passed, at first with blood, the last sample free from blood, but slightly albuminous, sp. gr. 1.022; temperature 98; pulse 130; abdomen more distended. It being evident that the man had a bad type of acute peritonitis, Mr. Barwell opened the abdomen in the middle line below the umbilicus. A large quantity of gas, not of feculent odor, escaped. No rupture of any viscus was found, but in its lower part the peritoneum contained a quantity of thick pus; there were no adhesions; parts of the intestines were congested, and the membrane was somewhat thickened. Three sponges passed into the lowest part of the cavity were withdrawn covered with tenacious flocculent pus. A smooth-nozzled glass funnel was then deeply introduced, and the part of the cavity washed out with ten pints of distilled water, temperature 99°, bringing away quantities of pus and flocculi. After sponging, a second smaller washing and sponging was directed to the upper part. The abdomen was then sewn close without any drain. The whole operation, including giving the anæsthetic and dressing, lasted an hour. 26th. During the night and day the patient frequently vomited a brown fluid with darker concreta; pulse rather fuller, 110; abdomen scarcely distended, and tender only in immediate neighborhood of wound. Lies flat, save for a small pillow under the knees; says he is quite well, and wants to go home. 28th. The vomiting slowly decreased during the night; the bowels acted rather copiously four times. The vomiting ceased and all symptoms passed rapidly away. The rest of the history is merely that of rapid convalescence, the man being very importunate in requesting to be discharged. In his remarks, Mr. Barwell, referring to a paper by Mr. Hancock, claimed for Charing-Cross Hospital the first conception of the idea of opening the peritoneum for acute peritonitis. He also pointed out that this operation has been performed fourteen times, though the operator has not always known what was the precise nature of the case; and the circumstances have been very various—ulcers or rupture of some part of the intestinal tract, or of an ovarian cyst. He emphasized the impossibility of draining the lower part of the peritoneum through a wound in the front of the abdomen, and advised that no drainage tube should be here inserted immediately after operation, but that, if distention recurred, the lower stitches should be removed and escape permitted. The presence of a tube which cannot in that position act as a drain might be injurious rather than beneficial. In the female, drainage per vaginam would probably be the most valuable treatment.—*Lancet*, November 5, 1887.

SODIUM SULPHITE IN ASTHMA.—As a modification of Bergeon's proposal to treat asthma by rectal injections of sulphurous acid gas, BATTESTI has employed

Sodii sulphit.	1 part.
Aquæ	500 parts.

of which a teaspoonful contains about one-sixth of a grain of the salt; this may be given several times daily, in proportion to the tolerance of the patient and severity of the symptoms.—*Revue de Thérapeutique*, November 15, 1887.

ARGYRIASIS FROM REPEATED CAUTERIZATION.—In the *Vratch*, No. 33, 1887, p. 635, DR. M. S. TOLMATCHEFF, of the Rüza Zemsky Hospital, records a case of chronic argyriasis. The patient, a strong peasant, aged fifty-eight, had accidently pricked the sole of his foot with a nail. On his admission three months later a granuloma was found on the injured spot. This was partly cut away, partly scraped out, the whole denuded surface being subsequently "Paquelinized," and afterward cauterized with solid nitrate of silver. In the course of two months fifteen cauterizations of the kind were performed. The patient then left the Infirmary, but seven months afterward returned with a new and still larger granuloma. The same treatment was again carried out, and fifteen further cauterizations with the solid stick were performed in the course of two months and a half. About the end of that period the man began to lose flesh markedly, and to grow weak. In a few weeks left hemiplegia came on, the face became of a leaden color, with the ecchymoses under the eyelids; profuse brownish-black spots of the size of apple-pips appeared on the cheeks, forehead, neck, abdomen, hands, and feet; there was a bluish line on the gums, the sclerotics became discolored; the mouth was dry and had a bitter taste. Microscopical examination of a piece of the stained skin that was cut out showed that the brownish-black specks were situated mainly in the lower strata of the Malpighian layer, and in the upper ones of the subcutaneous cellular tissue. A month's treatment by tepid baths, iodide of potassium, and Glauber's salt, did not effect any improvement. According to Dr. Tolmatcheff's reckoning, the whole quantity of the silver salt employed in the case during a twelvemonth was not more than one drachm and a half, the average quantity used at a sitting taken at three grains.—*British Medical Journal*, Nov. 12, 1887.

FOR BLENNORRHAGIA.—RICORD has prescribed with success

℞.—Aquæ rosar.	ʒ 50.
Zinci sulphat.	gr. 15.
Plumbi acetat.	gr. 30.
Tinct. catechu.	
Tinct. opii (Sydenham) . . .	āā ♏ 45.

for injection.

MAURIAC substitutes tannin for acetate of lead, and subnitrate of bismuth for tincture of catechu, and prefers the combination to the classic formula of Ricord.—*Revue Générale de Clinique et de Thérapeutique*, November 24, 1887.

THE BACTERIOLOGY OF THE BREATH.—SHABLOVSKY and VARGUNIN, of St. Petersburg, conclude from the examination of expired air, that the reserve air is optically pure; that is, it does not contain any microbes (as Tyndall teaches). The negative results given by this series of experiments demonstrate also that the current of expired air does not carry away and out any microbes from the oral cavity.

But the expired respiration air does invariably contain microbes, though their numerical strength oscillates between wide limits. The average number amounts to 54.18 per cent. of all microbes floating in the surrounding atmosphere. The first moiety of the expired respiration air contains 80.54 per cent., and the other 27.82 per cent. of the atmospheric microbes.

The remaining 45.82 per cent. of the air microörganisms probably settle down for a while on the mucous membrane of the upper respiratory tract, to be subsequently expelled with expectoration, etc. Only a trifling proportion of microörganisms can penetrate into the pulmonary alveolar tissue, since the respiration air itself does not descend deeply into the lungs, the gas changes between it and the reserve and residual air proceeding by way of diffusion.

The following varieties of microbes were found by Dr. Shablovsky in the breath. (*a*) Colonies in the shape of patches of the size of a pin's head, of a rich milk-white color, with a slow growth on the surface of gelatine, the latter remaining unliquefied. They consisted of very mobile cocci and diplococci, measuring 0.5μ in diameter. (*b*) Lemon-yellow colonies of the size of a hemp seed, with a slow superficial growth without changing gelatine. They consisted of large cocci, measuring about 1μ, and forming groups of two or four individuals. (J. Eisenberg's yellow sarcina.) (*c*) Yellow-brown colonies, liquefying jelly, the liquefaction area having the shape of a shallow funnel, with irregularly fringed edges. Their growth was more rapid than those of *sub a* and *b*. They consisted of motionless monococci and diplococci, measuring 1μ. (*d*) White colonies, which in the beginning had the shape of a small, irregularly fringed patch, but subsequently became surrounded by a zone of liquefaction, and then coalesced into a whitish formless mass. Their growth was fairly rapid. They consisted of motionless monococci and diplococci, measuring 0.7μ. (*e*) Grayish colonies, swiftly spreading over and liquefying the surface of jelly. They were formed by micrococci, measuring 1μ, chained two or three together, and endowed with a slight swinging and progressive motion. (*f*) Colonies of the bacillus subtilis. (*g* and *h*) Yellow-brown and yellow-white colonies of some yeast fungi. (*i*) Mould fungi (Penicilium glaucum and Aspergillus glaucus).—*Medical Chronicle*, November, 1887.

THE ACTION OF CHROMIUM.—DR. HEINRICH PANDER, of Dorpat, publishes an account of some researches he has made on the physiological action of chromium. The compound which he found to answer best was the double lactate of chromium and sodium. Chromic acid and its salts produced both acute and chronic symptoms, salts of chromic oxide causing only chronic or, at most, subacute forms of poisoning. The chromic acid compounds were found to be a hundred times more toxic than those of chromic oxide. The acute forms of poisoning show themselves by the disturbance of the respiration and of the central nervous system; chronic forms affect the skin and also the mucous membranes when air containing finely divided chromic oxide is allowed to come into contact with them. The heart's action was not directly affected by any of the preparations. The chief as well as the earliest morbid changes appeared in the kidneys under the form of parenchymatous nephritis, followed by the interstitial form: also in the gastro-intestinal tract, where inflammation, ecchymoses, and swollen follicles were found. There were also morbid appearances in the blood and the spleen. In chronic cases the spleen was shrunken and the hepatic parenchyma had a cloudy appearance. Chromium was found to be absorbed both when given hypodermatically and also when administered by means of the gastro-intestinal tract, at least when soluble compounds were employed. Chromic acid preparations were absorbed with great rapidity, both by the skin and the stomach. When in very small quantities chromic acid and its salts were reduced to chromic oxide. The elimination of chromium took place mainly by the kidneys, but also to some extent by the liver and bowels. Death was caused in acute cases by arrest of respiration and disturbance of the central nervous system; in chronic cases by morbid changes in the blood, the kidneys, and the digestive tract. Dr. Pander was unable to find any indication as to the value of chromium as a therapeutic agent.—*Lancet*, November 12, 1887.

A USEFUL APPLICATION DURING TEETHING.—QUINCERAT prescribes

Tannin	ʒ 2.
Tinct. iodin.	gtt. 75.
Potass. iodid.	gr. 15.
Tinc. myrrh.	♏ 75.
Aquæ rosæ.	ʒ 6¼.

A teaspoonful or tablespoonful should be used in a glass of water applied to the gums every morning, and after the mouth is cleansed after feeding.—*Revue de Thérapeutique*, November 1, 1887.

THE RELATION OF THE AIR TO COMMON DISEASES.—HENDERSON concludes an extended article on this subject in the *Glasgow Medical Journal* for October and November, 1887, as follows:

But, again, it is clear that the opinion we form of the etiological significance of organisms, must be greatly influence by the answer to the question which has been discussed in the previous pages—Do common germs normally enter our bodies? If they do, which is the opinion we consider the balance of evidence favors, then it follows that in unhealthy houses a constant excess of these potent particles must pervade the system, and the risk of their growing and multiplying by the aid of comparatively weak determining causes must be

intensified. These conditions will naturally tell most upon young children and delicate persons.

But, even if the other view be correct, that germs do *not* enter the body in health, it is proved that in consequence of slight departures from health, they enter and grow, for they become visible in the tissues. Thus, in any case, organisms *may* grow at very early stages, and in point of fact this is known to occur in some diseases. Now, the appearance of organisms implies that there has been a struggle between the life of the tissues and the living invaders, in which the latter have been victorious, and, therefore, their antagonistic influence upon tissue life must considerably precede the period when they become recognizable in the tissues. These considerations indicate that the influence of organisms may come into play at a very early stage in the genesis of our common diseases.

ANTIPYRIN, IN VARIOUS COMBINATIONS.—CAPITAN, in the *Revue de Thérapeutique* of November 15, 1887, gives the following useful combinations of antipyrin: In heart diseases—

Sparteine	1 part.
Antipyrin . . .	$\frac{1}{10}$th to $\frac{1}{6}$th part.

It may be mixed with the bromides, as in

Antipyrin	2 to 3 parts.
Potass. bromidi . . .	3 to 4 parts.

In cardiac troubles with defective elimination, Antipyrin, potass. iodid., equal parts, may be given.

Antipyrin may be used in the following gargle:

Aquæ	℥12½
Potass. iodid.	gr. 15.
Tinct. iodin.	gtt. 30.
Antipyrin	gr. 30.

in pharyngitis.

It may be combined with naphthaline, as follows:

Naphthaline.	gr. ¾.
Iodoform	gr. $\frac{3}{10}$.
Tannin	gr. 1½.
Antipyrin	gr. 1½.

This may may be given in pill form, three or four times daily.

This combination is very useful in the treatment of intestinal colic, with catarrhal diarrhœa.

FOR ACUTE TONSILLITIS.—LEBRUN has used to advantage:

Aquæ menth. piper. . . .	30 parts.
Acid. boric.	1 part.

to which should be added 4 parts of an astringent fluid composed of

Benzoin.	1 part.
Alum.	2 parts.
Aquæ	20 parts.

The mixture resulting should be used as a gargle.—*Revue de Thérapeutique*, November 1, 1887.

RUPTURED TUBAL PREGNANCY.—At a recent meeting of the British Gynecological Society LAWSON TAIT contributed notes of a further group of twelve cases of ruptured tubal pregnancy in which he had performed abdominal section, and tied the bleeding point on account of hemorrhage, which threatened life. He had already reported twenty-three such cases in the columns of the *Journal*. All of these cases had recovered except the first; of the last twelve eleven had recovered and one died. Every one of these operations had been performed under conditions of the utmost gravity, where life was threatened; and he had no hesitation in saying that nearly, if not quite, all these lives would have been sacrificed but for prompt interference. The first case had failed because he knew not what to do. He was too long over the operation and wasted time securing bleeding points as they arose, instead of rapidly separating all adhesions, regardless of the bleeding points, down to the base of the tumor, which was the broad ligament. A ligature placed round that and secured at once arrested hemorrhage; not a drop was ever lost afterward. In the other fatal cases the hemorrhage had already progressed too far; the patient was almost dead at the time of operation. She made a great struggle to get through, and lived five days, but then succumbed. He regretted not having employed transfusion in this case.

Mr. Lawson Tait said the diagnosis was not always possible, but it might be made correctly in probably about eighty-five per cent. of the cases. The real clew to the nature of the case was a history of sterility for some considerable time, the arrest of menstruation for weeks or even months and a sudden access of pain and collapse, with repetitions of these attacks. The operation was simplicity itself. "Open the abdomen, go at once to the seat of rupture—that is, the broad ligament—and tie it, for until you come to the ligament itself, the tissue is always so rotten and friable that any attempt to arrest the bleeding in any other way cannot succeed; then clear out the débris, and put in a drainage-tube." Of course, amputation of the ligatured mass was a matter of necessity; nobody would ever dream of leaving such a thing to putrefy in the abdomen. As to the proposal to destroy the life of the fœtus, and arrest the growth of the ovum, he had never been called to these cases until such a proposal was too late. He had never seen them until the period of rupture. Hemorrhage was then the danger with which he was concerned. Further, there was abundant proof that hemorrhage might go on after the fœtus had been dead for weeks. He doubted if a diagnosis could be made before the period of rupture. If it were possible with an electrolytic needle to piece the body of the fœtus, it might kill it, but would it kill the placenta? There was no question that in these cases the placenta continued to grow after the fœtus was dead.

All these thirty-five cases produced within the short period of seven years, confirmed the statement of Dr. Blundell that the condition was by no means uncommon, and that in many instances of women dying from internal hemorrhage, the real cause of their death was never ascertained. Thanks to the progressive emancipation of the professional mind from the thraldom of authority within the last ten years, we had now the means, if we had a reasonable time in which to act, to save at least the great majority of these cases.—*British Medical Journal*, November 12, 1887.

A GENTLE PURGATIVE FOR DYSPEPTICS.—SÉE has used

℞.—Sulphur. sublimat., potass. tartrat. (pulv.), magnesiæ calcinat.; equal parts.

Dose one teaspoonful several times daily.—*Revue de Thérapeutique*, November 15, 1887.

GLOSSAL TUBERCULOSIS.—DR. L. V. ORLOFF, of the Princess Helena Pavlovna Clinical Institute, gives an account in a St. Petersburg medical journal of a case of tubercular ulceration of the tongue, the nature of which, though there were slight signs of pulmonary phthisis, was definitely decided by microscopical and bacteriological examination. The importance of this latter means of diagnosis is pointed out by Dr. Orloff. Tubercular ulceration of the tongue, when primary, as it sometimes is, might in this way, if diagnosticated and treated, perhaps be prevented from being followed up by the pulmonary affection. Some experiments were made in order to test the possibility of direct communicability by inoculation of rabbits' tongues with the secretion from the ulcer, but only negative results were obtained.—*Lancet*, November 12, 1887.

MUSTARD PAPER.—An Italian pharmacist gives the following formula for a convenient mustard paper:

Gutta percha (in scraps) . . .	4 parts.
Bisulphide of carbon . . .	100 parts.
Ground mustard (freed from oil by pressure)	q. s.

The rubber is to be dissolved in the carbon; strong paper is to be dipped in the fluid, the mustard sprinkled upon it, and a roller passed over it to secure the firm adherence of the mustard. The paper may then be cut in convenient sizes. Heat is not needed in applying it. Moisture is generally sufficient to secure its adherence. —*Journal de Médecine*, November 20, 1887.

HYSTERIA AMONG SOLDIERS.—DR. JANSSEN gives an account, in the *Weekblad van het Nederlandisch Tijdschrift voor Geneeskunde*, of several cases of hysteria and hystero-epilepsy occurring amongst Dutch soldiers. In one of the latter class of cases occurring in a man of twenty-one, who had come of a highly neurotic family, where there were several attacks during the day characterized by semi-consciousness, extremely rapid respiration, abdominal tenderness, coldness of the extremities, with cold sweating, pulsation of the carotids and other arteries, opisthotonos, and convulsive spasm of the extremities, Dr. Janssen found that the attacks could be arrested by exerting firm and deep pressure with the closed hand on the left iliac region, or by a powerful induced current. The surface of the body was anæsthetic, and if the skin were lightly pricked with a pin, not only did the man not cry out, but no blood appeared. Various anti-epileptic and anti-hysterical remedies were tried without benefit. Different metals were applied to the surface of the forearm, but the only one which produced any effect was silver, which left a red mark. This induced Dr. Janssen to prescribe nitrate of silver for internal use, and this produced a great improvement in the patient. In another there was aphonia and aphasia, the lad being able to understand what was said to him, and to read and write, but not to speak—an example of Charcot's hysterical mutism. Treatment produced no effect on this patient, and he had to be discharged from the army.—*British Medical Journal*, November 12, 1887.

PRIMARY CARCINOMA OF THE ORGAN OF HEARING; RECOVERY.—LUCAE, of Berlin, reports in the *Therapeutische Monatshefte* for November, 1887, the case of a man, aged thirty-one years, who suffered from a growth in the meatus of the right ear, which so nearly filled the aperture as to render examination of the more distant portions of the ear impossible. Microscopic examination of portions removed gave every reason to believe it carcinoma.

The treatment consisted in douches of chlorine water, and the application, by insufflation, three times weekly, of equal parts of pulv. herb. sabin, and alum. ust.

Gradual improvement followed. Three years after his first examination the foreign growth had disappeared. Seven years after he presented himself for treatment, complete recovery, including restored function, ensued.

CHRONIC MYOCARDITIS.—DR. NEISHTAB, of Ekaterinoslavl, in some articles in recent numbers of the *Russkaïa Meditsina*, details some cases of cardiac disease he has met with, which show that chronic disease of the heart muscle, myocarditis chronica, or amyoatrophia cordis, may exist quite independently of endocarditis or pericarditis. This myocarditis scarcely ever affects the whole of the heart's muscular wall, but confines itself to the right or the left side. When the diseased condition is advanced, it gives rise to definite physical signs, by which it is easily diagnosticated. These are want of rhythm and a remarkable diminution in the secretion of the urine, which, however, is of a normal character. The subjective sensations which accompany this condition are similar to those due to stenocardia.—*British Medical Journal*, November 12, 1887.

SIMON'S TREATMENT OF WHOOPING-COUGH.—In the first stage of the disease he orders

Tinct. belladonn., tinct. aconit., aquæ lauro-cerasi, equal parts, proportionate to the child's age.

After the convulsive stage has become established he employs an emetic once or twice each week, and alters his first prescription as follows:

Tinct. belladonn., tinct. aconit., equal parts, of which a carefully proportioned dose should be given morning and evening.

If food is rejected it should be repeated immediately after vomiting, when coffee may be also given with advantage. The nourishment and strength of the patient should be conserved in every possible way.—*Les Nouveaux Remèdes*, November 24, 1887.

URETHRAL ENDOSCOPY.—In the *Boston Medical and Surgical Journal* of December 1, 1887, DR. ALLEN describes Leiter's (Vienna) perfected instruments, and reports five cases of urethral disease in which endoscopy proved convenient and advantageous in treatment.

ANIMAL TANNIN.—We learn from the *Chemical News* that tannin may be obtained from the bodies of weevils, which infest granaries. 500 parts of weevils yield 15 parts of tannin.

THE MEDICAL NEWS.

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SATURDAY, DECEMBER 24, 1887.

THE CROWN PRINCE'S CASE.

THE MEDICAL NEWS received this week the following reassuring cablegram from SIR MORELL MACKENZIE, at San Remo, concerning the condition of the German Crown Prince:

"A growth the size of a split pea exists on the left ventricular band of the Crown Prince's throat, but it does not look malignant. The October growth is much diminished in size, and the ulcer on it has cicatrized. The swelling of the glands has quite gone, and there is no œdema."

It is to be hoped that this new growth which Sir Morell Mackenzie distinctly states does not look malignant, is situated *upon* the tissues and not *in* them, and that it may be simply what is known as a papilloma or warty growth, similar to that removed last June from the vocal band of the same side. The description of the present condition of the October growth seems to justify the opinion that it has been an abscess tumor and not a malignant growth.

The cablegram is on the whole quite reassuring, and presents no indication to modify the favorable points in the case expressed in our issue of December 10th.

THE TREATMENT OF TYPHOID FEVER.

IN the issues of THE MEDICAL NEWS of December 3d, 10th, and 17th, we have presented our readers with an outline of the modes of treatment in typhoid fever pursued at twelve of the chief hospitals of this country. There is a remarkable uniformity of opinion that the essential details in ordinary cases consist in hygiene, diet, and nursing. This has been one of the great gains of the century in the management of fever, and in this country the profession can never be sufficiently grateful to those courageous men, Nathan Smith, Jacob Bigelow, and Austin Flint, who, more than any others, taught us to make a knowledge of the natural history of a disease the starting-point of our medication. The possibility of arresting the course is only hinted at by one writer, but the so-called abortion of the disease is extremely doubtful, and at one clinic cases terminate spontaneously, which at another would be held to be striking illustrations of arrest by medication.

Not a suggestion is made as to specific treatment, the goal toward which, in this class of diseases, we are all working; but, except in one direction, the outlook is not very encouraging. The development of the poison in the intestine naturally suggests measures directed to the limitation of its growth, or the neutralization of its products, and the administration, as intestinal disinfectants, of naphthalin, thymol, and, perhaps, carbolic acid and iodine is an attempt to meet this indication. Experimental work may lead to the discovery of some reagent which can influence materially the growth of the typhoid bacillus, and not at the same time prove injurious to its host.

Apart from the accidents of perforation, hemorrhage, and a few complications, the important questions dealt with by the writers are how to combat the fever and how to resist the progressive asthenia. Hydrotherapy does not seem to have made much headway at American clinics, and even the recent statistics of Brand do not appear to have made a convert. Repeated spongings, with an occasional cold pack, are regarded as sufficient. Properly performed, the former measure is one of the most satisfactory which we possess for reducing fever. We should like to insist on the great importance of the cold pack, or bath, in those ataxic cases in which from the outset the nervous system is profoundly involved.

Of medicinal agents for reducing temperature, quinine, so long a favorite, has been replaced by antipyrin and antifebrin, both of which act promptly and safely. From fatal cases in which these heat-reducing agents have acted well, we have learned the lesson that it is not so much the pyrexia as the whole infectious process, of which the fever is but a feature, which constitutes the real danger, and with this we too often fight a losing battle. It is the misfortune of these recently introduced antipyretics that they do not seem to modify the course of the disease, even when the temperature has been persistently reduced by them. The use of alcohol is recommended by all the writers, and we have, as yet,

no substitute for it in the progressive asthenia of the disease. We expected a more decided expression of opinion as to the value of digitalis, spartein, and ergot, in the failing heart of fever. The administration of the first named remedy is popular with many practitioners whenever the pulse becomes weak and rapid. Ergot and strychnia are of great service also, and in the so-called cardiac cases many French writers prefer them to alcohol.

We appear to have reached a stage in the treatment of these specific fevers at which we may look back with satisfaction at what has been accomplished, and with hope look forward to a future full of bright possibilities. So far, the determination of specific organisms in connection with particular diseases has done less than might have been anticipated in modifying our therapeutics, but on the rapid progress of organic chemistry we can confidently expect not only a clearer knowledge of the manner in which these bodies act, but also combinations from the laboratory, which, if they cannot control the growth, may at least neutralize or modify the action of the substance which they produce.

THE NEW ORLEANS QUARANTINE STATION.

THE report of the Committee of the College of Physicians of Philadelphia concerning the state of our quarantine defences has deservedly attracted wide attention and general commendation. In so far as the Committee confined themselves to discussion of the condition of affairs at the ports of New York, Philadelphia, and Baltimore, to which their personal investigations were limited, one of our valued southern exchanges, the *New Orleans Medical and Surgical Journal*, expresses its approbation in terms not less hearty than those coming from other quarters.

The Committee, however, in putting the question, "To what extent do the existing arrangements at the ports of New York, Philadelphia, and Baltimore fulfil the requirements for an efficient maritime quarantine against cholera?" added the following:

"[We speak of these ports only because circumstances did not permit of more extended personal investigations, and there is no reason to believe, from the published official descriptions, that the conditions of other ports of entry upon our Atlantic and Gulf coasts are in any respect superior.]"

The parenthetical classification of the quarantine system of Louisiana, with others not specifically mentioned, as, in a general way, not surpassing that existing at New York, has called forth, on the part of our esteemed friends of the Crescent City, a spirited protest, in which they say: "It is a great pity that so excellent a report should be marred by a grievous sin of commission. In inserting the passage quoted in their report, the members of the Committee proclaim their ignorance of the great strides that have been made in this locality in maritime sanitation." They admit that the Committee have evidently performed all of their duties conscientiously, for even where they make a grievous error they believe they are correct, since they base their statement upon 'public official descriptions.'" Besides, in their address to the medical societies of the United States, is the following: "According to the official description of Dr. Joseph Holt, President of the State Board of Health of Louisiana, it would appear that the quarantine in the Mississippi is, in respect of establishment, fully up to the requirements of modern science." Doubtless the Committee would have been equally complimentary to the Mississippi quarantine below New Orleans in their report, had the above official description been published before the presentation of that report. Of the "published official descriptions" to which the Committee referred, it seemed proper that they should form their opinions principally from the latest official comparative report upon the various quarantine stations of the Atlantic and Gulf Coast accessible to them, namely, that of 1886, by Dr. John H. Rauch, Secretary of the Illinois State Board of Health. This was all the more natural, since that report could in no manner be suspected of reflecting the influence of local pride or commercial interests.

In that report it is true that Dr. Rauch, whilst speaking of the Louisiana quarantine, says: "I am, therefore, enabled to endorse from personal observation the claim made that this is the most thorough and vigorous system of sanitary quarantine which has ever been enforced for the protection of a port from the introduction of foreign contagion into this country—if not in the world." But, in his concluding remarks concerning the New York quarantine, in the same report he uses the following equally commendatory language: "With reference to the exclusion of cholera and smallpox, the quarantine plant and facilities of the port of New York *are unrivalled* (italics ours), the printed regulations judicious, and with proper vigilance the service should suffice to prevent either of these diseases from obtaining access to the country through this avenue."

Undoubtedly, so far as quarantine against yellow fever is concerned, the system devised and perfected by Dr. Joseph Holt for the protection of the port of New Orleans against imported diseases, appears to be admirable. The methods and facilities for disinfection at the upper station are, as far as we know, unequalled anywhere in the world, and the associated establishments lower down the river are valuable adjuncts in efforts to keep disease at a distance.

But, however praiseworthy modes and means of disinfection may be at any quarantine station where

large numbers of immigrants constantly or may from time to time arrive, the absence there of sufficiently large and convenient buildings for the landing and separation into small groups, isolated from each other, of all the ship's inhabitants during the period of detention is, especially in quarantine against cholera, a most serious defect. Whilst it may be justly claimed that New Orleans is better prepared to disinfect a ship, crew, and passengers at the upper station, than is even New York, nothwithstanding the latter's "unrivalled plant and facilities," yet, with respect to means for the speedy termination of a ship's cholera epidemic among five or six hundred immigrants, we are still unquestionably of the opinion that, at least in this one most essential modern requirement for the efficient handling of cholera in quarantine, the plant and facilities at New York, imperfect as they undoubtedly are, should still be regarded as unrivalled at the present time in this country.

A port which undertakes to protect the country against the occasional invasion of Asiatic cholera, should provide all the essential means of rapidly discovering and destroying the contagion. Thorough disinfection is only one of these, whilst debarkation, and segregation into small isolated groups, properly housed and fed, under the strictest sanitary surroundings, are nowadays regarded as no less essential for the successful and prompt extinguishment of the germs of this disease. Had the excellent system devised by Dr. Holt been planned a year or two subsequent to an experience with cholera, instead of ten years after the last epidemic, no doubt his great knowledge and ingenuity would have enabled him to develop a scheme of very perfect defence against that disease, as well as yellow fever.

While the Louisiana system of quarantine certainly has many strong features, especially in the proper handling of yellow fever, yet it is by no means free from weak points, and, when confronted by cholera, these should justly be regarded as a source of danger to the country. The interchange between Dr. Rauch and Dr. Holt of telegrams on December 9th of this year, concerning the arrival at New Orleans, on December 4th, and the landing there three days later of 614 emigrants, brought by the steamship "Elysia," from Palermo, seems to emphasize this danger.

In his last telegram, Dr. Rauch "regrets that the 'Elysia' and her passengers were not detained longer." (Can "Elysia" be a misprint for "Alesia"?) He also takes occasion to remind the quarantine authorities that "twice has cholera been introduced into this country *via* New Orleans at this season of the year," and to make the very pertinent inquiry, "Why was the 'Elysia' sent to New Orleans instead of to New York?"

Has the tide of immigration from the recently infected districts of Sicily and Southern Italy been turned from New York on account of the unpleasant experience of the "Alesia" and the "Brittania" in that port; or, has it set in, for the moment, toward New Orleans because quarantine is known to be inactive there during the winter season?

Whatever the reason may be, we cannot but regard the circumstance as contributing additional weight to the considerations which should prompt the country to demand the establishment of an efficient and uniform direction by the National Government of quarantine at the seaboard. Our health laws should be such that the commercial interests of rival ports should be allowed neither to suffer nor profit through a transference from one American port to another of those dangers to the public health which immigrants bring to our shores. During commercial activity there should be no season in which the quarantine safeguards are not in a state of constant readiness; and the treatment of immigrants should be neither more nor less exacting at one port than at another.

That the official declaration by the Italian Government of the complete and sudden extinguishment of cholera in that country so soon after its widespread prevalence in regions where the climate is mild even in the mid of winter, should be received with due allowance. Past experience, as well as late United States consular reports of the existence of cholera in Terralba, are ample to warn us. The recurrence of cholera in South America, even before the warm season there has quite returned, should be looked upon as significant of possible danger in the spring from that quarter also.

The present situation appears, therefore, highly opportune for the earnest and unbiassed consideration by the physicians of all parts of the United States, of the serious matters embodied in the report on the existing defects of quarantine along the Atlantic and Gulf Coasts, and set forth in the address accompanying it, which the Committee of the College of Physicians of Philadelphia has been authorized to communicate to the medical societies of the United States.

REMOVAL OF A LARGE BRAIN TUMOR.

AT St. Mary's Hospital, Philadelphia, on Dec. 15th, DR. W. W. KEEN removed a tumor from the left side of the brain of a man aged twenty-six years. The patient was injured by a fall at three years of age. At twenty-three years of age he suffered from epilepsy with right-sided deviation of the head and eyes, followed by paralysis of the right arm and leg and aphasia. The initial symptoms of the epileptic fits pointed to the centre for conjugate deviation of the eyes, as discovered by vivisection,

and largely upon this was based the accurate diagnosis and surgical treatment.

The tumor measured 2⅞ by 2⅛ inches, and was 1¾ inches thick. It extended from the fissure of Sylvius into the first frontal convolution, and from near the fissure of Rolando into the bases of the three frontal convolutions, and weighed 3 ounces and 49 grains. We learn that the patient is doing very well; so far the highest temperature having been only 100.8°, and already primary union of the flaps has followed, except at the drainage openings.

ON December 12th, DR. L. ERNEST NEALE, of Baltimore, Demonstrator of Obstetrics in the University of Maryland, performed the Sänger-Cæsarean section upon a patient at the Free Lying-in Hospital of the University of Maryland. The case was one of dystocia from contracted pelvis. The mother died about the third day, but the child is still living.

THE Methodist Episcopal Hospital, of Brooklyn, was dedicated December 15th, with religious exercises by BISHOP HURST, of Buffalo, and others of the clergy and laity. The medical address was delivered by DR. HORATIO C. WOOD, of Philadelphia. There is but one pavilion, with about seventy beds, completed at present, but the foundations are laid for accommodations for three times that number when the finances are at command for the completion of the buildings. The total cost, when finished, will have been a million and a quarter of dollars. GEORGE I. SENEY, Esq., by whose name this institution is most commonly called, founded it liberally about six years ago, and thought to carry the project through entirely upon his own shoulders, but being a railroad magnate whose properties suffered a decline in value, the fulfilment of his generous plans was of necessity postponed. His gifts amounted to over $400,000; others have contributed nearly half as much more. It is stated that this is the only Methodist Episcopal institution of the kind in the world, and there can be no doubt as to its eventual success and full endowment, and that too, before many years have gone by. The beds of the "Seney" Hospital are, for the most part, free and will not be restricted to the sick and injured of any denomination.

THE Medico-Legal Society, of New York City, held its annual meeting on December 14th, and the election resulted in retaining the officers of last year in their positions; with the exception that the Vice-Presidency fell to DR. W. G. STEVENSON in place of the late DR. CARNOCHAN. A lively debate occurred on the jurisprudence of inebriety, ex-Judge NOAH DAVIS presiding; and alcohol received so many hard thrusts, that when the time for dinner came the banqueters paid heed to the teaching given them and wine was most sparingly ordered.

GEORGE WIEDLER, the slayer of Dr. Duggan, of Brooklyn, has been sentenced to twenty years' imprisonment at hard labor. This is the full penalty for the crime of manslaughter, of which he was found guilty by the jury. But, for "good behavior," as it is called, the murderer may receive a reduction of punishment to thirteen years at Sing Sing. The judge, when sentencing Wiedler, showed very clearly that he considered the trial a miscarriage of justice. He said, "I firmly believe that if you had been dealt with according to the testimony, you would now be standing here for sentence for murder in the first degree, and not for manslaughter." This criminal has saved his neck through the exertions of his lawyers, who did not hesitate to besmirch the good name of the dead physician.

REVIEWS.

A SHORT MANUAL OF SURGICAL OPERATIONS. By ARTHUR E. J. BARKER, F.R.C.S., Surgeon to University College Hospital; Assistant Professor of Clinical Surgery and Teacher of Practical Surgery in University College, London. 12mo. pp. vi. 423. London and New York: Longmans, Green & Co., 1887.

WE can speak well of this book. In modest compass it furnishes a fair exhibit of the set operations of modern surgery, while it also gives directions for the performance of some that have pretty much had their day. Very properly more space is given to the newer operations, but even here Mr. Barker claims to have put severe restraint upon himself so as to give a condensed account of the steps of the operations. As we have indicated, the result is very satisfactory. For while the book cannot take the place of more elaborate and extended treatises, nor, indeed, does it aim at so doing, the well-read surgeon, who is called upon to do an operation for the first time, will find in Mr. Barker's chapters just such a summary of operative procedures as is necessary to refresh his memory, and bring the salient and essential points of the operation into clear relief. Our author has had large experience with operative surgery, and by the clearness and simplicity of his style shows that he writes of a familiar subject; but while he is sufficiently decided, there is entirely absent from the book anything of unpleasant dogmatism. Indeed, we could have borne with a little more of criticism, and a fuller expression of the author's own estimate of certain operations which have attracted notice of late years. The chapter upon abdominal surgery is very full and very explicit, as is fitting in view of the well directed efforts which have made that region the field of the most daring and most successful exploits of modern operative surgery. Mr. Barker apologizes for the illustrations, most of which have been drawn by himself, but even if not very artistic they serve well to make plain his meaning, and are valuable

helps to a correct understanding of the text. Those illustrating brain surgery represent well the existing state of our knowledge as applied to the most recent practice. Altogether, the book will be found valuable for its accuracy, its brevity, and the discriminating character of its contents.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, December 5, 1887.

THE PRESIDENT, D. HAYES AGNEW, M.D., IN THE CHAIR.

DR. CHARLES B. NANCREDE presented the

SPECIMENS FROM A CASE OF LITTRÈ HERNIA.

During the latter part of June, of this year, a case was brought to the Episcopal Hospital, nearly moribund, in which symptoms of strangulation had been present for four days. They had not been especially acute. There had been some vomiting, but no distinctly fecal matter had been brought up. The constipation was not complete. One or two efforts at taxis had been made, but were said to have been unsuccessful. In the right groin a very small tense tumor was present. Being under the impression that this was one of the forms of hernia in which only a portion of the calibre of the bowel had been caught, he determined to try to relieve the strangulation. He cut down until he came to what seemed to be the sac. On opening it a little blood-stained serum escaped. He next reached what looked like omentum. During his manipulations the tumor suddenly became softer, and about a drachm of thick pus welled up. He made a free opening, and found in the neck of the sac a mass resembling in color and appearance the skin of a grape. This came away on the slightest touch, and he searched for an opening in the intestine, but could discover none. He then concluded that, for some cause, the peritoneal coat had sloughed off. The man died five or six hours afterward, neither benefited nor injured by the operation.

At the post-mortem the intestines were found covered everywhere with a layer of false membrane, with pockets of pus. At one portion, near the internal ring, was found a place where the false membrane was absent over a circular space, corresponding to the portion of false membrane which he had found in the ring. The portion of gut nipped in the ring appeared to have been only about one-fourth of its circumference. While this variety, although uncommon, was still quite often met with, Dr. Nancrede believed that his case was the first where a piece of *gangrenous false membrane* had been stripped off and left in the neck of the sac, thus simulating gangrene of the bowel.

DR. WILLIAM HUNT said that he was present at the post-mortem of a similar case in which a portion of the gut became strangulated in the femoral ring. There were symptoms of obstruction, but the condition was not recognized during life.

DR. D. HAYES AGNEW had seen the autopsy of one case in which the portion of the bowel strangulated was not larger than the little finger. In this case the symptoms were not very acute.

DR. JOHN M. BARTON, a few years ago, saw a case of this kind in collapse. There were symptoms of strangulation, and he searched all the openings without finding any suspicious fulness. At the autopsy a portion of ecchymosed intestine, one and a quarter inches in length, and one-half inch in breadth, was found in the inguinal ring.

DR. DE FOREST WILLARD had operated in one case in which the extent of the hernia was slightly more marked than had been described. The outer wall of the intestine was involved to the extent of one and one-half inches, while the inner wall was just pinched. There were symptoms of strangulation, but no tumor could be found. He performed laparotomy in order to ascertain the cause. The patient, however, died in the course of three days.

DR. MORTON reported the history of a case in which he had performed

LAPAROTOMY FOR PERFORATION OF THE BOWEL IN TYPHOID FEVER.

(See page 729.)

DR. WILLIAM HUNT said that there could not be a more perfect description of his own case than the history which Dr. Morton had given of his patient. He had been sick for three weeks with mild typhoid fever. An error in diet was followed by intense pain in the abdomen, and sudden collapse. He was treated for fourteen days on the Graves and Stokes plan—that is, opium to the full extent. A blister was placed over the abdomen, and he was nourished with liquids. Following this he had phlebitis, abscess, and other complications, and was two years in recovering. This is not the history of ordinary local peritonitis. Dr. Gerhard, Dr. William Pepper, Sr., and Dr. George B. Wood were confident that perforation had taken place.

DR. W. W. KEEN said that the only case of typhoid fever in which he had been confronted with the question of abdominal section, and the first published case, he thinks, in which this question was raised, was one seen about two years ago with Dr. James C. Wilson. The only thing that deterred them from operating was the question of diagnosis. Dr. Morton had said that the time for operation is the moment that perforation has taken place, but the difficulty is to tell positively whether or not perforation has taken place. In the case alluded to, there was sufficient doubt to lead to delay. The next day the patient being better the operation was deferred and finally was not performed, the child recovering. He thought that there is no doubt as to the propriety of the operation when the diagnosis is reasonably well made out. The sequelæ of typhoid fever which require surgical interference are not very few. A good many cases of necrosis of the larynx occur during convalescence from typhoid fever, and operation in these cases could not materially add to the dangers, for nearly every one of them dies if it is not done.

DR. NANCREDE said that some time ago he was asked by a colleague to see a case in which it was thought that perforation had occurred. He was not satisfied that such was the case, and even if there had been, the condition of the patient contraindicated operation. The autopsy showed that there was no perforation. Some time later he was asked to see another case in which it was be-

lieved that perforation had occurred. The attending physician thought that he detected crepitus in the abdominal walls. He examined the case three times, but could not find this, and the patient recovered.

DR. BARTON asked Dr. Morton to state the points on which he based the diagnosis in his case.

DR. MORTON said that the points were as follows: The patient who had a mild typhoid, soon after eating most improper food, was suddenly seized with severe localized pain, a violent chill, and a temperature of 104.5°; the pain continued and soon extended all over the abdomen; these symptoms in connection with a pulse of 146 convinced him that perforation had taken place.

DR. S. W. GROSS said that it is not so much a question of mistakes in diagnosis as it is whether or not we shall operate in a certain class of cases. In one like that just described, he should not hesitate, as the signs conclusively indicated perforation, and being a walking case, the powers of life had not been greatly debilitated. In the majority of cases of typhoid fever the operation would be out of the question. He would, however, criticise the technique of the operation as described. The insertion of Lembert sutures for the closure of the perforation was eminently proper, but, from a pathological standpoint, he considered the treatment of the second lesion improper. Ulceration was still going on, and the bringing together of the serous surfaces would certainly not arrest it. If he were to meet with an ulcer which had almost perforated the gut, he would excise it, and approximate the edges of the wound.

DR. MORTON said that in the treatment of the ulcer referred to, it would have been difficult to excise it without materially interfering with the calibre of the bowel. The ulcer had reached the peritoneal coat, and he felt better satisfied to turn it in, rather than leave it unprotected; and he could only say that if he again found the same condition, he would pursue the same plan. He would not be willing to close up an abdomen, knowing that there was simply peritoneum between the contents of the bowel and the abdominal cavity, which would probably be followed by a perforation, and necessitate a repetition of the operation.

DR. AGNEW said that he was that day called to see a case of supposed perforation in a young man in the fourth week of convalescence. Twenty-four hours before he saw him he had been seized with a sudden pain in the right iliac fossa. He fell back in a state of exhaustion and fainted. This was followed by great tenderness and abdominal distention. When he saw him he was better. The distention was not so great, and the pulse had improved. He believed that in that case there was no perforation. The time that has elapsed would have considerable weight in the diagnosis. He did not believe that we shall ever accomplish much by operation in cases of perforation from typhoid ulcers.

DR. NANCREDE related the history of a case in which he performed

LAPAROTOMY FOR HÆMATO-SALPINX.

The lowest angle of the wound was two inches above the pubes. The lowest deep stitch was introduced one and three-fourths inches above the pubes. There was some venous oozing at the angle, and a superficial stitch was introduced one and three-eighths inches above the pubes. The abdominal walls were unusually thick, and the needle was an ordinary glover's. A glass drainage tube was put in two and one-half inches from the pubes, and carried down into Douglas's cul-de-sac. The ligatures on the nodules were tied as close to the uterus as could be done with safety. The patient was catheterized after etherization. After the next catheterization, some three hours after the completion of the operation, about three ounces of bloody urine containing tube-casts were removed, showing that there must have been very little in the bladder at the time of operation. In forty-eight hours the blood disappeared. The drainage tube was taken out on the fourth day, and the lower stitches on the sixth day. On the twelfth day she turned on her side, and shortly afterward, on attempting to urinate, urine escaped freely through the track of the drainage tube. She refused to be catheterized, and went all night passing urine only twice, when there was some leakage through the opening. The patient is doing well; no urine escaping through the abdominal opening, owing to the use of the retention catheter. He had not been able to account satisfactorily for this complication. Was it possible, he asked, that the superficial stitch passed into the bladder wall? Did he injure a pervious urachus? In tying the broad ligaments, did he draw in a portion of the wall of the bladder and ligate it? He was inclined to the urachus view, as he thinks it to have been impossible that he could pass a superficial stitch inclosing three-fourths of an inch of tissue with an ordinary straight needle, through an abdominal wall fully one inch thick, and pick up an empty bladder one and one-fourth inches above the pubes. If he did, this should be a warning to operators not to approach even within two inches of the pubes with their incisions. [The fistula has since closed, and nothing but temporary inconvenience has resulted.]

DR. KEEN called attention to the fact that when empty the female bladder has a "Y" shape. Frozen sections show that one arm of the "Y" extends some distance up the anterior wall of the abdomen. In a case of fibroid tumor, in which he performed laparotomy for the removal of the appendages, he found the bladder adherent to the abdominal wall. He had to extend the incision as high as the umbilicus before he got above the bladder.

DR. HUNT could not help thinking that there was some peculiarity in Dr. Nancrede's case. What practical anatomist has, in making an ordinary cut of the abdomen from the symphysis to the umbilicus, ever opened the bladder?

DR. S. W. GROSS exhibited a specimen of interest which showed one of the disadvantages of the use of the silk ligature for tying the pedicle of an ovarian tumor. Dr. Martin, of Berlin, removed an ovarian cyst and secured the pedicle with a silk ligature. Some time later the patient presented symptoms of calculus, and, on examination, a large phosphatic stone was found, and crushed by Dr. Max Nitze. The nucleus was several feet of silk thread which had ulcerated into the bladder. The lady then came to this country. She consulted him about the first of last month on account of a return of the vesical symptoms, when he detected a stone.

Prior to the removal of the stone he threw an ounce of a four per cent. solution of cocaine into the bladder, and applied the same solution to the urethra on cotton.

He then rapidly dilated the urethra, carried in a small pair of lithotomy forceps and removed this stone. It is phosphatic, weighs eleven grains, and has formed around a bit of silk ligature, about one inch of which projected from the stone.

This case is interesting from another standpoint, as it is the only case in which he has not had more or less incontinence after free dilatation of the urethra. The urine was bloody for twenty-four hours. The operation was done on Sunday, and on Wednesday the patient left the hospital.

DR. KEEN said that two years ago he dilated the urethra for the purpose of exploration and had considerable difficulty in introducing his forefinger. The procedure was followed by retention requiring the use of the catheter for four days.

DR. MORTON said that a woman aged twenty-eight years was recently admitted to the Pennsylvania Hospital with the history, that three years ago she had induced an abortion by the introduction of a hairpin into the uterus. Three months ago she attempted the same procedure. The hairpin, however, slipped from her grasp and entered the uterus. The abortion was produced, but the hairpin remained. He dilated the neck of the uterus and was able to remove the pin, which had given rise to considerable endometritis.

DR. AGNEW did not think that, as a rule, extraction of calculi through the urethra causes incontinence. In one case, after he had gotten the stone into the urethra, he found that it was larger than he had supposed, but as he could not readily push it back into the bladder, he brought it through the urethra. It was one and one-half inches in diameter. This woman recovered without incontinence.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 15, 1887.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

DR. T. HERRING BURCHARD read a paper on

THE MODERN TREATMENT IN STRANGULATED HERNIA.

He said that, encouraged by the remarkable successes obtained in the treatment of non-strangulated hernia by the methods suggested by Banks, Czerny, and others, surgeons had latterly paid special attention to the radical cure operation, as applied to cases in which strangulation existed, and the results achieved had been most gratifying. The general principles upon which the operation is based, as a legitimate surgical procedure, are:

First. A more general recognition by the profession of the value of time in the earlier stages of the strangulation, so that surgical relief could now generally be rendered before pathological changes, which were irremediable, had taken place in the tissues.

Second. Modern herniotomy implied an abandonment of those uncertain and pernicious methods and practices which, founded on a false pathology, had sought to relieve the strangulation by producing a condition of systemic relaxation. It was now recognized that spasm, as a causative agent in the production of strangulation, never exists.

Third. Modern herniotomy restricted the employment of taxis to within limits that were rational and safe. Necessary as properly directed taxis is in the reduction of hernia, by its indiscriminate and reckless use irreparable damage had not infrequently been done the intestine; and he could not but feel that it had been a misfortune to designate by a special appellation the manipulations employed in reducing hernia, since the practice had exaggerated their importance in the treatment, and been a fruitful source of abuse.

Fourth. Modern herniotomy implied the early resort to a cutting operation. Many lives had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fecal extravasation and stercoraceous vomiting, the peritonitis and collapse were not necessary and integral factors of the primary condition of strangulation, but secondary complications developing later on in the progress of the disease, the legitimate result of delay in affording relief to the original constriction. If, however, the strangulation were relieved before inflammation of the gut or adjacent tissues had supervened, these grave dangers could be avoided.

Dr. Burchard's practice is, if possible, to operate on every case of strangulated hernia in which gently applied taxis, under anæsthesia, preceded, as a rule, by the application of ice, does not yield reasonable expectations of success within about one hour afier positive symptoms of strangulation have presented themselves. In his opinion nothing is gained by delay, while everything is risked.

Fifth. Modern herniotomy is an antiseptic operation, demanding the fullest application of Listerian principles.

Sixth. Modern herniotomy requires in the disposition of the hernial sac the finest impartiality of judgment. Certain cases require incision, while in others the strangulation can be readily reduced without opening the sac; so that it would be folly thus to complicate the operation and expose the patient to unnecessary danger.

Seventh. Since Mitchell Banks, of Liverpool, had urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of strangulation, the inestimable advantages of an operation for radical cure, the strongest possible encouragement had been given for the attainment of an early, thorough, and perfected operation.

Regarding the special treatment of strangulated hernia, Dr. Burchard said that he had nothing novel to add to the excellent recommendations that had been published on the subject. His experience had led him to the adoption of a plan of treatment substantially as follows:

First. Pain is allayed, vomiting quieted, and nervous tranquillity secured by the hypodermatic administration of morphia with atropia.

Second. As soon as practicable a careful examination is made of the hernial tumor, any attempt at reduction being studiously avoided.

Third. If evidences of local inflammation are present, or if there is much swelling of the tumor, a poultice of linseed meal and cracked ice, or the ice coil, is at once applied. These are dispensed with if the patient is feeble or the strangulation is of long standing.

Fourth. A stimulating enema of turpentine and oil, or a larger emollient one of thin flaxseed tea, is admin-

istered, and the rectum thoroughly washed out. Should it be required, the patient is catheterized. If the tumor is at all distended, no attempt at taxis is made until

Sixth. The patient is anæsthetized, permission having first been obtained to proceed with the operation in case taxis should fail.

At this point Dr. Burchard said he wished to emphasize the advantages to be gained by putting the patient under full anæsthesia (preferably by chloroform), covering the tumor with a rather large and heavy ice poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from thirty to forty minutes. In a number of instances thus treated he had the satisfaction of seeing the tumor, almost imperceptibly, slip back of itself, even after prolonged taxis had been unsuccessfully employed. As to just how long the attempt at reduction by taxis is justifiable, no absolute rule can be laid down. To the practised touch a moment is sometimes sufficient to determine the possibility of a successful reduction. In other cases it is advisable that the trial should be prolonged for twenty, or even thirty minutes, provided always that only the gentlest manipulations are employed.

Taxis having proved unsuccessful, the operation should at once be undertaken. By careful dissection the sac should be fully exposed; when, if the strangulation be of recent occurrence, and the sac free from inflammation and of normal appearance, an effort may be made to secure its return by gentle taxis into the cavity of the abdomen. Should adhesions bind down the sac, they may be broken up if not too extensive; precautions being taken that all bleeding has been effectually checked before the sac is returned. If constricting bands girdle the body of the sac and prevent its return, they should, if possible, be divided. Adhesions around the neck of the sac must be treated with great deliberation. Having pointed out the complications and dangers to which such adhesions might give rise, he mentioned that serous effusion within the sac might be safely gotten rid of by puncturing the sac with a capillary hypodermatic needle.

If, now, the sac could not be readily reduced, he went on to say, it should be carefully opened. Unprejudiced surgeons, he thought, are at present agreed that in all those cases where it would be safe to replace the hernia by simple taxis, if that were possible, the same thing might be done after restraining adhesions of the sac or constricting bands around its neck had been divided by the knife. But in those cases in which the symptoms are suggestive of an aggravated condition of the bowel, and on account of which it would be dangerous to attempt to reduce it by taxis, it is necessary to open the sac. The sac having been opened, the stricture should be sought for and divided.

Dr. Burchard here alluded to some points of practical interest in connection with the return of the gut. One of them was in regard to cases of deep congestion. How far the vitality of the bowel is consistent with change of color, drying of the secretions, emphysematous crackling, and fecal odor, is a difficult matter to decide. He had seen two cases in the practice of the late Dr. James R. Wood in which gut that was actually purple was replaced, and in both instances with the best possible results. In one case of his own, where a deep furrow marked the seat of the stricture, and where the gut itself was of a dark maroon shade, the condition of the gut did not warrant its reposition for nearly three hours after the operation; whereas in another case, of more prolonged strangulation, with grave constitutional symptoms (the condition of the gut being almost identical, with the exception of the furrow or groove), the circulation was restored in one-fourth the time. He said he could not feel that we are justified in returning strangulated intestine until it gives some evidence of reanimation; while it is perfectly possible to keep it enveloped in moist flannels and rubber tissue for several hours. In cases of ulceration it is sometimes advisable to practise partial excision before returning the intestine, and in some instances the condition of the gut does not warrant this until several hours after the operation. Extensive perforations and lacerations occurring in herniated bowel necessitate the formation of an artificial anus.

Treatment of adhesions.—If acute, and simply binding down the body of the sac, they may be gently broken down. If they surround the neck of the sac, binding the intestine to the upper end of the sac, or the intestine to the cord, or to an undescended testis, it is necessary to accomplish the separation with the greatest possible gentleness and circumspection, on account of the extreme friability of the tissues. Chronic adhesions may be divided with more boldness, provided no traction is made on the inflamed intestine. In all cases the intestine, both above or below the strictured portion, should be carefully examined after the operation.

The radical cure—The modern operation finds its greatest advantage in the radical cure it accomplishes, by the complete closure of the sac and permanent obliteration of the hernial canal; and it has been successfully performed upon all forms of hernia, inguinal, femoral, and umbilical, with equally satisfactory results.

In the present light of hernial surgery he thought that no operation for strangulated hernia could be said to be properly performed without the final closure of the hernial canal. By this practice five decided advantages are gained:

First. Complete isolation of the peritoneal cavity, and its permanent closure.

Second. Permanent closure of the patulous orifice through which the gut escaped.

Third. Shortening of an abnormally elongated hernial canal.

Fourth. Prevention of septic percolation into the cavity of the abdomen in case suppuration should ensue.

Fifth. The inestimable advantages that would result to the patient from a permanent cure.

In the performance of the operation, the clinical requirements are, first, a safe and satisfactory disposition of the sac; and, second, a total obliteration of the hernial rings, and an accurate coaptation of the sides of the canal.

Disposal of the sac.—The sac may be dealt with in one of several ways:

First. It may be reduced within the abdominal cavity, and the canal then obliterated.

Second. It may be left within the canal (especially when firm adhesions prevent its safe return), and the superficial tissues and the skin are firmly approximated over it.

Third. It may be ligatured, the hernial investment amputated, and the stump returned.

Fourth. It may be ligatured and amputated, and then invaginated in the canal.

Fifth. It may be drawn up upon itself and fixed as a bulwark against the internal ring, as in Macewen's operation.

Sixth. The abdominal wall may be divided longitudinally and parallel to the pillars, and the sac then woven into the fibrous structure.

DR. JOSEPH D. BRYANT said that he thought the first method should be dismissed from consideration, except in very acute hernia, on account of the danger of causing adhesions with their attendant pain and discomfort, or of lighting up peritonitis. The objection to the second method was that with the sac remaining *in situ*, complete obliteration of the canal could not be effectually secured. A canal thus treated became exceedingly sensitive, and a truss could scarcely be worn. Between the remaining methods a choice could sometimes be made only after mature deliberation.

DR. BURCHARD said he had operated in nine cases of strangulated hernia, in which he had been enabled to carry out the operation in all its details. Eight of these had recovered, and one developed delirium tremens on the second day, and died from this cause on the fourth. Having alluded to a number of interesting points in connection with these cases, he spoke, in conclusion, of two practical matters which suggested themselves: (1) In cases of stercoraceous vomiting and collapse, nothing had equalled in his experience the use of hot water employed as a stomach douche, as practised by Tait. A long, soft rubber tube was passed into the stomach, and a stream of hot water very gently injected in a continuous current. By this means the stomach was not only thoroughly washed of its fecal contents, but the best possible stimulant in cases of hernial collapse was furnished by hot water so employed. (2) As a factor in the production of acute general peritonitis concealed hernias in exceptional localities are apt to be overlooked. He had met with two instances of this kind in his own experience; one being a case of inguinal bubonocele of a direct variety, and the other one of concealed femoral hernia.

DR. R. F. WEIR made some remarks on the question

HOW SHOULD THE SAC BE TREATED IN HERNIOTOMY?

He said that Dr. Burchard had covered the ground so completely that but little remained to be said. Like Dr. Burchard, he thought that the surgeon should be guided by the circumstances of each individual case, and he did not advocate any one method of procedure to the exclusion of others. He illustrated by diagrams the operations for radical cure of Macewen and Czerny, and went on to say that while the radical operation unquestionably marked an improvement in this branch of surgery, it could not as yet be regarded as a perfected operation. Having given some statistics showing the comparative frequency of relapses, he said, in conclusion, that surgeons were everywhere practising the operation, and he feared too freely; that is, too freely in non-strangulated hernia.

DR. W. B. DE GARMO read a paper on

THE CONSERVATIVE TREATMENT OF IRREDUCIBLE AND INCARCERATED HERNIA.

He said, in opening, that his paper did not relate in any sense to strangulated hernia. He would present the histories of a number of cases which were intended to show that the two opposite opinions concerning operative interference and non-interference were both wrong. He would advocate operation in certain cases which could not be reduced, but he thought it unwise to operate in all cases. The first case which he related was one of irreducible inguinal hernia of ten years' standing. The first day he devoted one hour to making taxis (by which term he wished to be understood as meaning certain very gentle manipulations, which were quite different from the taxis usually made use of), but with apparently very little effect. By the fourth day, however, he succeeded in reducing the hernia by this means. At first a truss could be worn for only a short time; but the tolerance of it gradually increased. The second case was also of ten years' standing, and the hernial tumor was of the size of a fœtal head at full term. The hernia was complicated, as was frequently the case, with a piece of omentum, and this proved to be irreducible; but it afterward disappeared under the pressure of the truss. After the hernia was first reduced the truss could not be worn in the standing position for a time.

The third case was characterized with attacks of colic in connection with the hernia. The hernia was gradually reduced by gentle manipulations; after which a truss was worn with comfort, and by the end of a year the patient thought himself cured. As the result of jumping out of a carriage, however, the hernia became strangulated. An operation was then performed, and he made a rapid recovery. Dr. De Garmo narrated some other cases, and said that of the ten, there were seven reductions and two failures, while one case was abandoned on account of the patient having diabetes.

He then went on to speak more particularly of the manner of reducing these supposed irreducible hernias into reducible ones. The first thing was to see that the mass was freely movable in the sac, and then use compression, rather than ordinary taxis. In the second place, the tumor is to be separated from the vicinity of the testicle, if it were situated in the scrotum. In other words, it is to be perseveringly stripped from its lower adhesions and gradually worked upward; no force whatever being used. The complete separation of the omentum, so frequently forming a part of the mass, is accomplished before the reduction proper is commenced. In some cases Dr. De Garmo is in the habit of directing self-applied taxis, practised daily. After the reduction the hernial sac usually remained; but if the hernia is kept properly in place by a well-fitting truss this generally disappeared in the course of time. Taxis is to be practised from fifteen to forty-five minutes at a time, and repeated once a day. None of his patients had been confined to bed for more than one week.

In those cases in which it was found impossible to reduce the hernia the tumor was compressed by a truss, and a strong suspensory support was also employed. It was important, however, to distinguish the contents of the tumor. If only omentum was present no trouble

could result, but if bowel were present the truss would cause more or less discomfort, and would be likely to lead to strangulation.

DR. A. G. GERSTER made some remarks on

STRANGULATED HERNIA IN CHILDREN.

This he said is a very rare condition in children, and he had met with but four instances of it in his experience. There is nothing peculiar in the character of the strangulation in such subjects, and he would direct attention only to a point of difference in the treatment required, as compared with that in adults. This was on account of the difficulty of preventing infection of the wound in small children. In most instances the hernia is congenital, and the neck of the sac is usually not very wide. On account of the danger of infection he advocated an open treatment of the external wound. Primary union does not occur after suturing, and, therefore, after securing occlusion of the sac and the abdominal opening he packs the open wound with iodoform gauze, and thus secures an aseptic condition.

Dr. Gerster then proceeded to relate the history of the four cases that he had seen. In one of them, a child two years and three months old, an error of diagnosis was made. The tumor was at first mistaken for hydrocele; but the true nature of the case was determined by the hypodermatic syringe, which brought away intestinal matter. It was also found to be a strangulated hernia; but as no urgent symptoms were present no active interference was made at this time. By the next day, however, all the ordinary symptoms of strangulated hernia had manifested themselves, and the radical operation was performed. During this a slight wound was made in the gut, on account of the adhesions present, and this was sewed up with the Lembert suture. In another of the cases strangulation of the hernia occurred four separate times in connection with eclamptic attacks, to which the child was subject. It was always successfully reduced under the use of chloroform; but when the accident appeared the fifth time it was determined to perform the radical operation, after which there was no further trouble from the hernia.

DR. V. P. GIBNEY said that he should like to make some protest against the strong condemnation of taxis which Dr. Burchard had expressed, as he had seen a number of aggravated cases of strangulated hernia reduced under taxis as employed by the average practitioner. As regards strangulated hernia in children, he did not recall a single case in all his experience in which the strangulation could not be reduced with the aid of chloroform. Furthermore, if it could be reduced, it could be cured simply by the wearing of a suitable truss. As the operation was a more serious one than in adults he thought, therefore, that operative interference should never be resorted to in children; and this became still less necessary in the light of the successful results accomplished by the conservative methods advocated by Dr. De Garmo.

DR. WEIR said that he had had two cases in children like Dr. Gerster's, and both had proved fatal. In two other cases he had successfully reduced the hernia by resorting to the expedient of inserting the finger into the rectum, and thus combining internal with external pressure.

DR. DE GARMO said that he had met with only temporary incarceration in children. No bad results had ever occurred, and he had never found it necessary to resort to taxis in such cases. In reply to a question from Dr. Weir as to just what he meant by the term taxis, he said that the gradual working of the tumor loose by passing the fingers around it was not taxis proper, but rather pressure. By taxis he meant the manipulation of the neck of the sac, but employed in such a way as to avoid pressure backward against the abdominal rings, which was apt to be resorted to in taxis as commonly practised.

CORRESPONDENCE.

IS THE QUESTION OF SILK OR SILVER LIGATURES STILL BEFORE US?

To the Editor of THE MEDICAL NEWS,

SIR: In the number of THE NEWS for December 3, 1887, I see a letter from Dr. Martin, of Ann Arbor, advocating the use of "braided silk suture in lacerated cervix and perineum," and I must beg of you the permission of adding a few lines upon the subject.

A year or so ago I called attention to the advantages of catgut in three cases—in a short correspondence in these same columns. Since then catgut has become quite popular through the efforts of Martin, who lauds the juniper preparation, and I have continued the use of the bichloride gut, which I esteem as highly now, as I did then, and my object in addressing you now is to call a halt in the discussion as to the merits of the various sutures in gynecological work.

I have tried them all faithfully, and I have come to the conclusion that *it matters not*, in the great mass of cases, *what the material be, provided it be* of sufficient strength and—*thoroughly antiseptic*. I do not object to the whale or kangaroo-tail tendon, but practically we must limit ourselves to silver, silk, or catgut.

Silver is more expensive and cannot be handled with the same rapidity, hence it is rarely used, and we are brought down to silk and catgut. Catgut possesses the great advantage over silk, that the surgeon need not trouble himself about the removal of the sutures; it possesses no disadvantage, is inferior in no way to silk, unless it be desirable that the suture remain longer than ten days. The catgut prepared in corrosive sublimate and alcohol, or in juniper oil, is as agreeable and convenient to handle as silk, and the surgeon will soon learn by experience for how many days he can trust his suture; the time varies with the thickness of the gut, method of preparation, and location of suture.

I prefer catgut for the reason that I need not trouble myself or patient with the removal of sutures, and that I can resort to buried sutures without change of material, but I claim no other advantage for this material. Silk, silver, kangaroo-tail tendon, horsehair, or any other antiseptic material is just as good.

As a matter of convenience, I have now used catgut continuously for over two years, externally and internally, on cervix, vagina, perineum, and other integument. I have even in one instance used catgut exclusively in an ovariotomy, for ligatures and sutures.

Indifferent as is the kind of material, so is the kind of suture with which we unite vaginal or perineal structures, provided the suture be drawn sufficiently tense, and firmly knotted, and we no longer trouble ourselves about the kind of knot with which the suture is tied—provided it holds. I might add, that in the hard tissues of the cervix, or, more correctly, in the tissues of an indurated cervix, the interrupted suture, as ordinarily used, is preferable.

Whilst all that Dr. Martin says as to the relative value of silk and silver sutures in cervix and perineum is correct, I find fault with the complete omission of catgut, and with any discussion regarding that material. I shall never forget the lesson I learned in a smoking-room on an express train, with my honored friend Dr. Parvin, when he told me, years ago, of a labor case with ruptured perineum, far out in the country, and no silver wire on hand; he took a hair from his horse's tail and sewed up the perineum, did not tie the legs, and scored a perfect success!

I could not but think of this case whenever I heard the relative merits of silk and silver discussed. Practice has confirmed the inference I drew, and I believe that gynecologists who are in the habit of operating, and operate frequently, will say with me, that, as a rule, in the usual gynecological operations *one suture is as good as another*, and *convenience alone should guide us* in the choice of material.

Frequently it is a great advantage if the annoying procedure of removal can be dispensed with, thus when cervical and perineal operations are performed in one sitting, or in an operation for cystocele and for rectocele in combination with a cervix or a perineum; in these cases catgut is to be decidedly preferred, but, as a rule, the operator can suit his convenience, the result is not dependent upon material or kind of suture. I do not object to the preferences of individual operators, and do not laud catgut[1] as superior to silk in anything but convenience. I claim no superiority for it, but neither do I admit the superiority of any other material in general for sutures; individuals have their preference, the result of habit and long continued experience, and now and then under circumstances certain materials are unquestionably indicated, but with the recent progress in surgery, with the development of antiseptic technique, these questions, formerly so important, as to material for suture, kind of suture, and kind of knot, have been blended in that of surgical cleanliness—antisepsis—this is the requisite. I may, perhaps, add, sufficient strength to permit of a perfect coaptation of the parts until union has taken place.

Several years ago, when I first took this position, I repeatedly used silk, silver, horsehair, silkworm gut, and whale tendon indiscriminately in one and the same operation, stitching with some, tying with others, to demonstrate to students of how little importance the material was, but for over two years I have used catgut only and prefer it, as a matter of convenience; let this then, and not superiority determine our choice—as there is no superiority.

Respectfully yours,

GEORGE J. ENGELMANN.

ST. LOUIS, December 5, 1887.

[1] I refer, of course, to the catgut of modern antiseptic surgery, a very different article from old time catgut.

THE EYESIGHT OF SCHOOL CHILDREN.

To the Editor of THE MEDICAL NEWS,

SIR: A notice in the Medical Progress columns of your journal of this date, as to a new apparatus devised by Prof. Cohn, for testing the eyesight of school-children, contains the comment that this is a matter which is scarcely attended to at all in this country. This would indicate an opinion that relatively less importance is accorded to this question by oculists here than abroad. As this is a somewhat prevalent mistake, a correction of it, and of several kindred errors may be in place.

Of about 140 investigations of the eyes in the schools thus far recorded, 21 have been made in the United States (more than in Great Britain, France, and Scandinavia combined); and while none of these are inferior in value to many of the often-quoted German studies, some are among the best of the kind. The earliest, Callan's study of negro pupils in New York (*American Journal Medical Sciences*, April, 1875), has few equals anywhere. But comparisons, though tempting, are dangerous.

So far as any special apparatus is required to supplement the test-letters of Snellen, it has been furnished by Green, Dennett, and others; and Prof. Cohn's card, which has long been in the hands of some of us, is simply a set of the E like "haken," which Snellen gave us long ago. There has been no trouble from lack of efficient means for such examinations, were the opportunities only afforded.

The American investigations have been comparatively unnoticed for several reasons: First, they have been scattered about in school reports, society transactions, and our countless journals, in a way that has made them extremely difficult to find, even for one who has for years been seeking them. Then the public interest in them is less. We have no compulsory military service, and our Government has not been forced to recognize the number of conscripts who have to be rejected because of defective vision or high degrees of near-sight—a point of no small concern to the military authorities of the Continent. So too, in our educational methods, we have little of the rigid grading of the German schools, which enforces some ten or twelve years of school before the University can be entered—each year crowded with an amount of work that casts our public school cramming in the shade. The increase in the percentage of nearsight from the lower to the higher classes, which sends the young Germans out more than half of them myopic before they go to the universities, must needs challenge the attention of educators and of the general public. The educated classes are, themselves, the victims; all professional men having to pass through this preliminary training—so that the facts are patent to the whole body of medical men, however much familiarity may have lessened the force of their lesson. Then, the status of the investigators on the Continent, often semi-official, has lent weight to their utterances and has aided in disseminating their results.

Doubtless the European investigators have had many difficulties in pursuing their studies, and are subjected to much criticism; but in America has there not been too often an unfortunate jealousy in the medical profes-

sion which has looked askance at all such examinations, lest they should bring the examiner into undue public notice? The most scrupulous conduct on the part of the investigator will not free him from the imputation of sordid motives in his undertaking; and the publication of results or the enforcing of their teachings will almost always arouse antagonism and invidious criticism. Among parents and educators there has been an indisposition "to have notions put into the children's heads that there is anything wrong with their eyes." The teachers have often all that they can do to carry out the curriculum entrusted to them, and naturally deprecate any investigations which may add hygienic duties to their tasks. Many of them are already laboring in the most self-sacrificing way to save their pupils from damage in school; but the majority ignore the matter in most of its aspects. The parents are too often inclined to resent as an invasion of their American liberties any investigation of their children's eyes, and oppose it as vigorously as the railway employés do the color-tests. All remote advantage is wholly overshadowed by present inconvenience, real or fancied. Under these conditions a self-respecting student of the subject must be zealous indeed to carry out such a piece of work; and not a few who have done so have withheld their results from publication.

There are among us dozens of competent men who, looking for no other reward than the right to utilize the scientific results of their studies for the instruction of themselves and others, would investigate in all our schools this crying need of our civilization, if only the opportunity were afforded them. The amount of labor involved is known only to those who have experienced it; but the importance of the data which remain to be obtained would nerve many to the task. Every such study will be of value to the school where it is made and to the individuals examined; and if regularly repeated at intervals, doubly so; while if well done its value will be much more enduring and far-reaching. A careful study of each investigation thus far made, has shown in most of them imperfections, grave, indeed, but readily avoidable; and vast as is the work already done, much remains to be elucidated by future examinations. The evil, though less crying among us than in Germany, is none the less real and menacing here, as numerous studies show. A great step would be gained if only a card of Snellen's letters or any other suitable test were to be placed in every school-room where the children could test their own vision and compare it with our standard; and for this purpose Dennett's card (*Transactions of American Ophthalmological Society*, 1886) is probably one of the best. But is it not time that the medical profession, at least, if not the general public, should be aroused to the importance of the subject and to a belief that it can be investigated, as it deserves to be, in a purely public spirit?

It is doubtless true that insufficient attention is given to the subject in this country, as you suggest, but I would protest that the fault is not to be ascribed to the oculists, who have already, in face of many obstacles, done excellent work, and stand prepared to continue it whenever their services are desired.

Very respectfully yours,

B. ALEX. RANDALL.

PHILADELPHIA, December 10, 1887.

NEWS ITEMS.

THE BOSTON MEDICAL LIBRARY ASSOCIATION has authorized its Executive Committee to purchase land on St. Botolph Street, on which at some time in the future to erect a library building. In order to secure the new lot it has been necessary to place a mortgage upon the newly purchased land, and also upon the present library building.

DR. THOMAS F. WOOD, editor of the *North Carolina Medical Journal*, is recovering from aneurism. His treatment has embraced his confinement to his bed for over a year.

MR. LAWSON TAIT has been appointed to a recently established Chair of Gynecology in Queen's College, Birmingham.

THE COLLECTIVE INVESTIGATION OF SYPHILIS is about to be undertaken by a committee of the various specialists interested in this study, in the German hospitals.

COLLECTIVE INVESTIGATION OF SCARLET FEVER.—The success which followed the collective investigation regarding the practical value of "swill milk," instituted by *Science* in June last, has led that journal to begin, in its issue of December 16, 1887, a similar investigation regarding scarlatina, as met by physicians in general practice. A list of inquiries has been prepared which covers the recently raised questions regarding scarlatinal contagion, and the replies of physicians, to these inquiries, in various portions of the United States will be published from time to time.

THE TOWN COUNCIL OF WONSACKET, RHODE ISLAND, recently held a conference with the physicians of the town to devise the best means of restricting scarlatina. Other municipalities could imitate the example with profit.

THE CROWN PRINCE OF GERMANY.—According to the *Lancet* of Dec. 10th, the physicians in attendance upon the Crown Prince are giving a trial to the treatment suggested by Dr. Freund, of Vienna, and based on his analyses of the blood of patients suffering from cancer which showed an excess of sugar. By a rigid exclusion of sugar from the diet, and the substitution of saccharin, it is attempted to reduce the amount of sugar in the blood, and by that means to prevent the malignant growth. Dr. Freund's views have not won general acceptance, and one fact which is strongly adverse to them is that the subjects of diabetes mellitus are not specially liable to be attacked by cancer. We are glad to learn that there has been an improvement noted in the Crown Prince's condition during the last fortnight, and we hope it may continue. The period of improvement corresponds with the adoption of Freund's treatment, and very naturally this has excited hopes that a further continuance of it may be attended with still greater success.

BLACK UPON GREEN, FOR OCULAR HYGIENE.—Several of the French railway companies and other public bodies have resolved on having their printing done on

green instead of white paper. The reason for the alteration is, that they believe the combination of white paper with black characters endangers the eyesight of their workpeople. Black on green has always been recognized as a good combination, and many railway tickets are so printed.

THE CHROTOGRAPH is a pencil manufactured in Germany for writing on the skin. It is made in various colors, and affords legible writing, which can be easily removed without the use of water. It is designed for the use of physicians, to make memoranda upon their patients.

VENTILATION OF SICK BEDS.—DR. WYMAN, of Cambridge, Mass., describes his method in a recent number of the *Lancet*, as follows:

In the Cambridge (Mass.) Hospital there is an arrangement for the ventilation of the beds not generally known; it is so effective that I wish to describe it. Beneath each bed is a ventilating tube of about eight inches diameter, fifty square inches area, leading directly through the floor to a foul-air trunk, beneath which it communicates with the main ventilating chimney. About 2000 cubic feet of air an hour is thus drawn from beneath each bed. This ventilating tube is connected with the bed above by a four-inch pipe of tinned plate, with a proper cover and joints, which passes around the side or foot of the bed and into it beneath the clothing. This pipe is lengthened with one of the same size of pasteboard or other substance, a non-conductor of heat, reaching to any part of the bed. By this simple means foul air is removed as fast as formed, the bed kept free from odor, and the patient's body is no longer surrounded with contaminating gases. As the air presses inward through the porous bed-clothing none escapes into the ward. Further, a two-inch flexible pipe is adjusted to that just described, and slipped over the hollow handle of the bed-pan when in use, carrying off odor from that also. In the same hospital similar means connect the beds in the private wards with the chimney of an ordinary fireplace, up which the pipe reaches about four feet to insure a good draught with a moderate fire; the part in the chimney is of black iron. The advantages of such an arrangement in cases of sloughs, foul ulcers, cancers, and in fevers with frequent fecal dejections, are obvious. It may be supposed that the passage of air through the bed would cool it too much. Practically it does not; probably the quantity of air passing is about the same as in beds ordinarily at the same temperature of the room, but in a different direction.

AN INDIAN'S BRAIN.—The College of Physicians of Vienna were greatly interested, at a recent session, by the examination of the brain of an Indian. They found the cerebrum inferior to the cerebellum in development, and in the former a tendency to the formation of a convolution in the frontal lobe, which is characteristic of the horse and ox.

A RED CROSS PRIZE.—This Society has offered a prize of $1400 for the best design for a portable hospital.

THE DESTRUCTION OF ANIMALS BY INTENTIONAL INOCULATION WITH TUBERCULOSIS.—From the *British Medical Journal* of December 3, 1887, we learn that the rabbits introduced into Australia a generation ago have increased at such a rate that the Government of New South Wales has offered a prize of £25,000 to any one who will discover a means of checking their further multiplication. M. Pasteur has come forward with a suggestion which belongs to the same order as one made some years ago and already carried into practice on several runs, without, so far as has yet been announced, any very great success. The older proposal was to inoculate a number of rabbits with tuberculosis, and to turn them loose to infect the rest; M. Pasteur's plan is to use the virus of the so-called fowl cholera in the same way. The disease can be communicated to fowls by giving them food sprinkled with cultivation fluids in which the bacterium of fowl cholera has grown; and he assumes that the disease could be communicated to rabbits, which are very susceptible to it when inoculated in the same way. He also assumes that it would spread from rabbit to rabbit by infection through the droppings.

CREMATION OF GARBAGE.—The cremation of garbage is a question of great interest to all cities at the present moment. It is, as yet, an experiment, but one upon which several cities are working with pardonable enthusiasm. Montreal and Wheeling, W. Va., are, on this continent, the pioneers in this movement. At Montreal, Dr. La Berge, the medical health officer, reports that the garbage is consumed in a perfectly satisfactory manner by the Mann furnace under a contract made by the year. There is no evidence as to the actual cost of the consumption to the contractor, as he, very properly, refuses to disclose the amount which he makes on his contract. At Wheeling, where the Smith furnace is used, we believe, reports vary as to its utility. It is evident that the municipal management of it is not the best which could be given it. At Des Moines, Ia., a small Engle furnace is in experimental use, and is working very satisfactorily. At Pittsburg, Pa., a Rider furnace has been in use about two weeks, which is too short a time to allow any judgment to be made as to its efficacy. In Chicago a Mann furnace is being constructed. It will soon be completed, and will be managed entirely by our very competent health department, and under such management it is very evident that we shall know its absolute cost and merits. Dr. De Wolf, health commissioner, promises to read a paper on the subject of garbage cremation at the next meeting of the American Public Health Association, in Milwaukee, in 1888, and we may rest assured it will furnish the facts which municipalities most wish to know.—*Sanitary News*, November 19, 1887.

THE DETECTION OF TRICHINÆ.—If the suspected meat be dissolved in pepsin and hydrochloric acid, and allowed to settle in a conical glass, the sediment may be removed by a pipette, and examined microscopically at the convenience of the observer.

MECHANICAL VENTILATION AND MICROÖRGANISMS.—HALDANE, in a recent paper read before the Sanitary Institute of Great Britain, reports the results of his investigations on the air of school-rooms, as follows:

Wishing to test more thoroughly the results of mechanical ventilation, we made a number of comparative

experiments on different days in the same room. The circumstances were as nearly as possible the same, except that on some days the mechanical ventilation was in operation, and on other days not, open windows, etc., being used instead. We found, to our surprise, that, whereas the carbonic acid present in the air was increased from 12.6 to 18.6 volumes with the mechanical ventilation not in operation, the average number of microörganisms remained almost exactly the same. Even when the mechanical ventilation was kept off for a week, this had no distinct effect in increasing the number of microörganisms. These anomalous results did not lead us to doubt the effects of mechanical ventilation in diminishing the number of microörganisms in air, as we found the number very small even in rooms where every other condition except the ventilation seemed to favor a large number. We were, therefore, forced to conclude that while the ventilation at the time is the decisive factor in influencing the amount of the gaseous impurities, it is not, other things being equal, the habitual state of the ventilation which influences the microörganisms. This led us to inquire into a number of points regarding the sources of the microörganisms.

It had previously been proved by Tyndall and others, that physical disturbances of any kind, such as those caused by the presence of human beings, have a great effect in disseminating microörganisms in air, and that air left perfectly still gradually deposits its microörganisms. We naturally, at first, expected that varying amounts of physical disturbance would very much obscure other differences. It turned out, however, that this is not the case. Although the influence of difference in physical disturbance is well marked, under ordinary circumstances other influences have a much greater effect, as we shall see.

That the microörganisms do not come from the breath, but are on the contrary filtered off by respiration, we showed by means of some experiments, the details of which need not be described here (see *Phil. Trans.*, vol. 178, B. page 92). That they do not come in any large number directly from the clothes or skin of the person present in a room, was shown by a number of observations made in the two chemical lecture rooms. Even during a course of crowded popular lectures there was found to be an average of only four microörganisms per litre, as compared with an average of about three when the room had remained empty. Nor did the number rise beyond six per litre when the room was left unventilated during the lecture, and the carbonic acid rose to nearly 40 volumes per 10,000. This observation alone shows strikingly, I think, that the carbonic acid is no measure of the number of microorganisms in the air of a room.

The microörganisms thus do not come to any large extent from the bodies of the persons present at the time. Nor do they come from the outside air, which is comparatively free from microörganisms during winter, as shown both by our own experiments and by the more recent and systematic ones of Dr. Percy Frankland. We must, therefore, conclude that they come from the floor and other parts of the room itself. If this is really so, the state of a room as regards cleanliness ought to have an effect on the number of microörganisms. This we found to be actually the case.—*Sanitary News*, November 12, 1887.

JAMBUL.—According to the *Pharmaceutical Record* (November 15, 1887), jambul is the fruit of the Indian syzgium jambul (Eugenia jambulanum), and is given for diabetes, in doses of five grains, three or four times daily.

THE VENTILATION OF SLEEPING ROOMS.—DR. BROWN-SÉQUARD, who has been preaching that bad ventilation of sleeping rooms and poor and monotonous food are great causes of phthisis, discussed the subject at the last meeting of the Academy of Sciences. Paris, taking many of his examples from England. Wherever population is dense and sleeping rooms ill-aired or overcrowded, consumption prevails. A room in which a consumptive person sleeps is reeking with contagion if the air he exhales is not carried off. Dr. Brown-Séquard exhibited an apparatus of his invention. A reversed funnel the shape of a lamp-shade is placed at the end of a tube, so arranged that, when it is placed beside the bed, the reversed funnel will be above the sleeper, and draw up the air he breathes. The other end runs into the chimney of the room. If there is none, it is taken through a heating apparatus to an air-hole. In either case the contagion is destroyed by heat, after the manner suggested a few years ago by Dr. Burdon Sanderson and others.—*British Medical Journ.*, December 3, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 13 TO DECEMBER 19, 1887.

HARRIS, H. S. T., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort McIntosh to Camp Pena, Colorado, Texas.—*S. O. 143, Department of Texas*, December 12, 1887.

CLENDENIN, PAUL, *First Lieutenant and Assistant Surgeon.*—Ordered from Camp Pena, Colorado, Texas, to Fort McIntosh, Texas.—*S. O. 143, Department of Texas*, December 12, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, FOR THE WEEK ENDING DECEMBER 19, 1887.

MURRAY, R. D., *Surgeon.*—Granted leave of absence for fourteen days, December 8, 1887.

GASSAWAY, J. M., *Surgeon.*—Granted leave of absence for fifteen days, to take effect when relieved, December 17, 1887.

IRWIN, FAIRFAX, *Surgeon.*—Relieved from duty as Acting Chief Clerk, Office of Supervising Surgeon-General, and to await orders.

CARRINGTON, P. M., *Assistant Surgeon.*—Ordered to examination for promotion, December 14, 1887.

BROOKS, S. D., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, to take effect when relieved, December 15, 1887.

MCINTOSH, W. P., *Assistant Surgeon.*—To proceed to Wilmington, N. C., for temporary duty, December 13, 1887.

MAGRUDER, G. M., *Assistant Surgeon.*—Granted leave of absence for twenty-one days, December 19, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 17, 1887.

HUDSON, A., *Medical Inspector.*—Ordered to the "Trenton."

BATES, N. L., *Medical Inspector.*—Detached from the "Trenton," and placed on waiting orders.